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EDITORIAL



JUSTIFICATION

We often hear it said in official circles: "The Amateurs don't use the frequency space they have allocated to them, so why should they grizzle if they lose some of it." Taking a very shallow look at this sort of remark might lead one to think that they have something there. But to us that's just rubbish, for there is much more to it than the apparent lack of use of bands because a monitoring station situated in or near a capital city can "count on one hand" the stations operating in a given band.

Take for instance the International DX bands—20, 15 and 10 metres; unless the monitoring facilities provided for elaborate cross checks on logs, we venture to say it would be impossible to say how many stations in the Commonwealth were operating at the same time. But there is plenty of evidence that they are if one listens to the overseas stations calling VK stations, the VK stations not being audible from 5 to 500 or more miles away depending upon orientation and back-to-front ratios of antenna systems. The Amateurs are using the bands alright and they will therefore be justified in expecting to maintain the bands they have now after the next I.T.U. Conference. Australia is not the only country who thinks so and is prepared to put up a fight to hold on to the little its Amateurs have. Listen to what an eminent U.K. magazine said of recent date:

"Proceeding from the basic assumption that the ether is free for all to use subject to reasonable safeguards reached by mutual agreement—a principle which needs constantly re-emphasising—we should now look at the conditions under which Amateurs are at present operating. Briefly, on virtually all bands except ten metres, they are 'working in the cracks'. That is to say, our rightful allocations are being trespassed upon by illegal commercial stations, to say nothing of noises emanating apparently from idling jammer transmitters. Though these encroachments have been increasing steadily and the whole situation gets progressively worse, it is nevertheless being met in the sense that more and more Amateurs are com-

ing on the air and a great deal of DX is being worked, world-wide, on both c.w. and phone.

"What this means is that Amateurs are quite capable of working under shared-band conditions, if they must. But it also implies that a shared-band means sharing—in other words, commercials have no grounds for complaint if they are being interfered with by Amateurs . . .

" . . . in the same way that Amateurs as a body, the most experienced, capable and progressive communicators in the world—have long since ceased to expect their own frequencies to be clear of interference by other Amateur stations, so the commercial use of the spectrum as a whole must be worked out, geographically and in time, to allow one channel to serve as many interests and services as possible . . .

"The present level of Amateur activity, with the high state of development of the art of Amateur Radio, has become its own justification for a proper share of the ether. This is not a matter of 'privilege' or even a 'right' (in the moral sense), but simply a requirement by virtue of sheer weight of numbers! Moreover, since Radio Amateurs are primarily concerned with and interested in Communication, they must have frequency areas available which are capable of carrying their DX traffic—that is to say, any suggestion that Amateurs can be compensated for h.f. bands lost by further allocations in the deserts of the u.h.f. or s.h.f. is completely unacceptable."

These pertinent remarks are only indicative of many being made in every country in the world. Unfortunately for the Amateur, the commercial people who want a whole channel to themselves or shared with some other country on an equitable basis geographically and in time, care little for the fact that the already narrow frequency limits of the Amateur bands are shared by thousands.

It seems certain that the Americas will retain their h.f. bands, U.K. apparently expects opposition, New Zealand, Hong Kong and other smaller Region III. countries expect to retain what they have at present. Which leaves Australia in the position—if reduction of the Amateur bands should be proposed—of sharing such frequencies with the Amateurs of other countries but not with its own Amateurs.

FEDERAL EXECUTIVE.

Overtone Crystal Oscillators*

BY R. M. WINCH,† VK20A

OVERTONE crystal oscillators are crystal controlled oscillators operating on a frequency which is a multiple of the fundamental frequency of the crystal. They find their greatest use in providing the injection voltage of converters for the bands above 21 Mc. In converters operating on these bands it is not practicable to obtain the injection voltage direct from a crystal oscillator, consequently it is necessary to use frequency multipliers after the oscillator. However, it is almost impossible to eliminate the unwanted harmonics from the oscillator. These unwanted harmonics cause spurious beats and signals, so it is desirable to have the generated frequency as high as possible to reduce the number of spurious signals. Overtone crystals are also used to some extent for transmitters, but they offer very little advantage over the normal fundamental frequency oscillators.

We are all aware of the way a quartz crystal is used as a shunt resonant circuit to control the frequency of a valve oscillator. The electrical equivalent of the crystal is shown in Fig. 1 in which C1 represents the capacity between the electrodes when the crystal is not vibrating, and L, C and R represent the mass, compliance and frictional loss of the crystal when vibrating. The crystal exhibits shunt resonance at a frequency corresponding to L and C plus C1. At this frequency the crystal has a very high impedance (with a very high Q) and is used in place of the LC circuit in an oscillator. However, the crystal also exhibits a series resonance at a frequency corresponding to L and C. This frequency is slightly lower than the shunt resonant frequency and at this frequency the crystal has a low impedance. At series resonance the crystal may be used to control an oscillator by placing it in series with the feedback loop. At the series resonant frequency the feedback will have a path of low impedance, but at other frequencies the path will have a high impedance and there will be very little feedback.

Quartz crystals also exhibit both shunt and series resonance at frequencies corresponding to odd multiples of the fundamental frequency. The reason why only odd harmonics may be used can be seen if the physical vibration of the crystal is visualised. With a shear type of vibration, the top surface of the crystal is moving, say, from left to right, while the bottom surface is moving from right to left. If we suppose a move from left to right to represent a positive voltage, and a move from right to left to represent a negative voltage, then we can

see that a shear vibration of the crystal will generate a difference of potential between faces.

Now let's think of the crystal being composed of two layers. The top surface of the upper layer is moving from left to right and generating a positive voltage. The middle of the crystal, which is the bottom surface of the upper layer and the top surface of the lower layer, is moving from right to left, and generating a negative voltage, and the bottom surface of the lower layer is moving from left to right, generating a positive voltage. Consequently, there is no difference in potential between the top and bottom surfaces of the crystal. However, with a third layer there is a further reversal of voltage with a consequent difference of potential between the top and bottom surfaces.

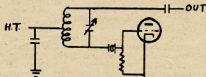


Fig. 2.

From this it will be seen that a crystal exhibits a difference of potential between top and bottom faces, only when its mode of oscillation corresponds to an odd number of layers, i.e. at odd harmonics. This harmonic activity is influenced by the method of grinding and also the method of mounting the crystal.

Overseas, crystals specially prepared for harmonic operation are now in common use, and may be used in practically all the circuits which are used for fundamental operation. However, most of the crystals available to the Amateurs of this country will show sufficient activity on the third harmonic to be used in suitable circuits. Typical circuits are shown in Figs. 2 and 3. An examination of these circuits will show that Fig. 2 is a Hartley, and Fig. 3 is a plate tuned inductive feedback oscillator, and that in each case the crystal is in series with the feedback path to the grid, i.e. operating at its series resonant frequency.

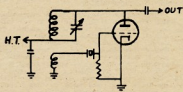


Fig. 3.

In both circuits the L and C combination is tuned to the desired frequency (three times the marked crystal frequency) and the feedback is adjusted so that there is just sufficient feedback to maintain stable oscillations.

If there is insufficient feedback, the oscillator will not start, and if there is too much feedback, sufficient energy will reach the grid, via the shunt capacity of the crystal, to maintain oscillations at a frequency determined by the LC circuit, and the oscillator will not be crystal controlled.

The amount of feedback required is a function of the gain of the valve (Eg, Ia) and the series impedance of the crystal. A crystal with good harmonic activity will have a lower series impedance and thus require less feedback than one with low harmonic activity. When the feedback is correctly adjusted, the oscillator will behave in the same manner as the normal fundamental oscillator.

As the LC circuit is tuned to a higher frequency, oscillations will commence, then gradually become weaker, and eventually stop. As with a fundamental oscillator the tuned circuit should be tuned just short of the point where maximum output is obtained, so as to obtain reliable starting and frequency stability. In Fig. 2 the feedback is increased by moving the tap nearer the plate end of the coil, and in Fig. 3 by increasing the size of the coupling coil or increasing its coupling to the plate coil. A good starting point in Fig. 2 is when the tap is approximately one-third of the way up the coil, and in Fig. 3 where the grid coil has one-third to one-half the number of turns of the plate coil.

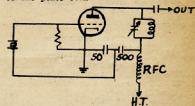


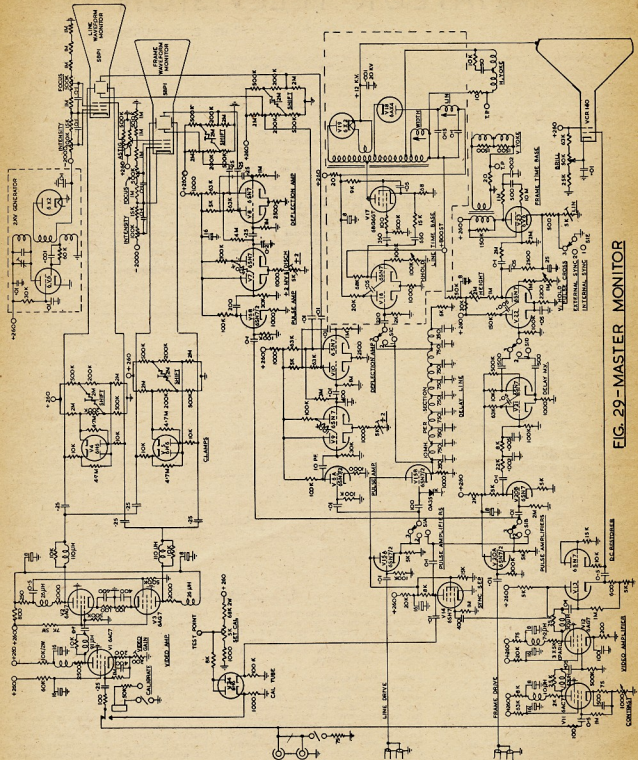
Fig. 4.

A convenient method of construction for the coils on Fig. 3 is to wind the plate coil on a former. Wire it into the circuit and, using the g.d.o., make sure it resonates at the desired frequency. Then, over the plate coil wind a layer of cellophane, sticky side out; wind the grid coil onto the tape with just sufficient tension to hold it in place, remembering that if the coils are wound in the same direction, the plate and grid connect to opposite ends. The whole grid coil can be slid up and down the plate coil to vary the coupling, being finally cemented into place when the correct adjustment is found. The plate coil should be proportioned so that the required frequency is attained with approximately 50-60 pF. of tuning capacitor in use.

Another circuit which is becoming popular is the so-called Robert Dollar circuit, using capacitive feedback. This is shown in Fig. 4. The values of the feedback capacitors should be suitable for all crystals in the 6-9 Mc. range in

(Continued on Page 10)

* Reprinted from W.I.A. N.S.W. Division's "Bulletin".
† 138 Boundary Street, Parramatta, N.S.W.



Using engineer's dividers, it is easy to measure the width of the front porch, sync, and blanking widths, etc., with the superimposed 3.2 usec. bars as a measure of time. The sync. generator high frequency pulse circuits can then be adjusted for correct pulse widths.

Similarly the horizontal bar of the cross shows the vertical blanking interval. Referring to Fig. 28, the equalising pulses can be seen (black) above and below the vertical sync. blocks. The line structure is sufficiently open to count the number of equalising pulses, vertical sync. blocks, and the number of lines lost in vertical blanking.

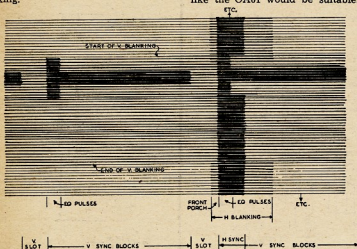


FIG. 28—PULSE CROSS DISPLAY

As both interlaced fields are displayed together, a total of 10 pre-equalising, 10 vertical sync. blocks, and 10 post-equalising pulses should be visible, half in line with horizontal sync, and half displaced by half a line. Also as both fields are displayed, there should be between 36 and 44 blanked lines in the vertical blanking period.

The Waveform Monitor

This consists of two c.r.t. displays with common video feed for vertical deflection, but differing time bases, in order that one shall run at half line rate, and show two lines (128 usec.), and the other at half-field (frame rate), and show two fields (40 milliseconds.).

The video to the c.r.t. plates is clamped at sync pulse tips, to permit register of the black level with the gratules. The response of the video amplifier is standard R.T.M.A. roll off, down 3 db, at 2 Mc. For optimum focus, balanced shift, and astigmatism controls are provided for both tubes.

A calibration tube, fed with line pulses, delivers pulses of precisely 1 volt p.p. to the video amplifier, via a relay when required, for calibration against the gratules. A test point is provided and when the d.c. voltage at this point is 10 volts measured on a v.t.v.m., an accurate 1 volt p.p. is present at the video amplifier input.

Picture Monitor

The VCR140 tube used has magnetic deflection and focussing. It has a double phosphor similar to the P7, and requires the same treatment as the 5FP7, a blue filter. A tube this size should also have a safety glass in front of it, and a dark blue Perspex is available, $\frac{1}{4}$ " in thickness, which will serve both purposes.

The video amplifier feeds the picture tube grid via a cathode follower, to reduce capacitive shunting of the 6AG7 to a minimum, and retain bandwidth. The other half of the 6SN7 is used as a d.c. restorer, but a germanium diode like the OA61 would be suitable. The

cathode from the sync. separator, which causes this tube to conduct heavily, bringing the anodes to earth potential, which cuts off the other half tube. A negative pulse then appears at the second cathode, of value preset to 1 volt p.p., determined by the anode d.c. potential. A relay is used for switching its output, because of the difficulty of mounting the switch close to the switching point, while having front panel control.

The waveform monitor time bases receive negative pulses from the sync. separator, or driving pulses as selected, the amplifiers V6A and V6B serving also to prevent half frequency kick back from the divide-by-two multivibrators, from causing erratic interlace in the picture monitor time bases. Each of these divide-by-two multivibrators (V7, V9) delivers a sawtooth to its respective deflection amplifier (V8, V10) for each horizontal display. Balanced shift controls again are used on the deflection tube plates.

Due to the proximity of the two electrostatically deflected cathode ray tubes to the magnetic deflection components of the picture monitor, some magnetic cross-talk may occur. Double concentric shields of 24 gauge g.l. around each 5BP1, and a sheet of 16 gauge b.i. between the upper picture monitor chassis, and the lower waveform monitor, reduces it out of sight. Magnetic fields from nearby power transformers will, however, cause trouble. For this reason, among others, the power supply is a separate unit and normally placed 2 or 3 feet below the monitor.

These two c.r. tubes require 2 kv. e.h.t., which is generated by a standard r.f. e.h.t. supply, using a 6V6 as oscillator, standard c.r.o. type oscillator coil, such as the "Aegis" M23, with a 6X2 as rectifier. This last is used as it is small enough to mount inside a 3" diameter shield can in which the coil is placed. The whole of the e.h.t. generator must be shielded, as the oscillator operates at about 1 Mc., at about 4 watts output, and must not radiate into the video circuits nearby. Simple shielding, the coil can, and a metal 6V6 leaves nothing detectable.

The picture monitor receives the same 1.4 volt p.p. video input to two-stage video amplifier (V11, V12). The bandwidth of the 6AC7/6AG7/6SN7/2/VCR140 grid circuit is flat to 6 Mc. This wide bandwidth is an advantage, as the picture tube is big enough to use for fault finding, and will resolve 6 Mc. with ease. The otherwise unused anode of the 6SN7 cathode follower V13A feeds a 6SH7 sync. separator V14.

The separated sync. output from this tube is then available for the time bases, via the switch S1, which enables internal or external sync. to be used, and also switches in the pulse cross delays. V15B drives the delay line and the undelayed input to the line, or its delayed output, is used to trigger the picture tube line time base V16, V17, V18, V19.

The delay line is made similarly to that described for the sync. generator, but the 10 mH. pies consist of 800 turns each of 39 B. & S. silk-enamelled wire, single wave wound on a $\frac{1}{4}$ " former, 3/16" wide, at $\frac{1}{8}$ " centres. These need not be wave wound, you could

cathode follower also provides a convenient independent feed to the sync. separator.

The separated sync. can be used to synchronise the time bases, or they can be switched direct to the vertical and horizontal driving pulses, which are looped into and out of the unit. A third position of this switch brings in the pulse cross delays, a delay line for line deflection, and a multivibrator for frame. The deflection circuits shown are fairly orthodox, with rather more care taken to preserve vertical linearity.

The Circuit

As most features in this unit have been covered for similar purposes in the units described earlier, the circuit (Fig. 29) should not need detailed description.

V1, V2, V3 are a video amplifier of appropriate bandwidth with gain sufficient to lift the 1.4 volt p.p. input to a level adequate to give 2" undistorted deflection on the 5BP1's at 2 kv. The 6AC7's are fairly fully driven, and some cathode peaking (400 pF.) is needed to maintain bandwidth, with the anode loads needed for adequate deflection. Individual 6H6 clamps (V4 and V5) clamp at the sync. tips at the c.r.t. plates, with balanced shift potentials acting through them.

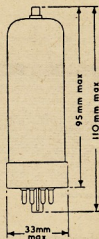
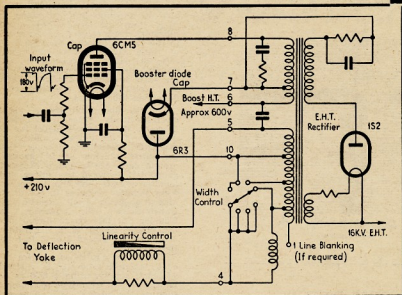
The calibrate tube V24 receives negative high amplitude line pulses on one

Mullard

TELEVISION VALVES

6CM5

LINE OUTPUT PENTODE



6CM5 CHARACTERISTICS

Heater ratings

6.3V at 1.2A

TYPICAL OPERATING CONDITIONS 90° DEFLECTION

Anode Voltage Supply (alternative Voltages)	200V	225V
Anode Voltage Boost	460V	472V (Approx.)
Total D.C. Supply	660V	690V (Approx.)
Screen Grid Voltage	200V	225V
Grid Input Voltage (pk to pk)	145V	145V
Anode Current (D.C.)	110mA	85mA
Screen Current (D.C.)	30mA	28mA

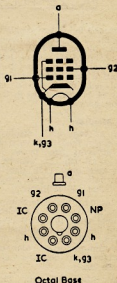
The 6CM5 is a television line output pentode having anode and screen dissipation ratings of 10 watts and 6 watts respectively. Peak anode voltage ratings of 7.0 kV positive and 3.0 kV negative together with a peak anode current rating of 350 mA ensure its suitability for 90° deflection systems with EHT voltages of the order of 18 kV. The reserve margins available ensure long service life. Additional data is available to design engineers on request.



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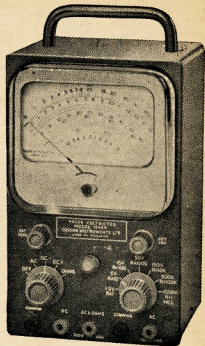
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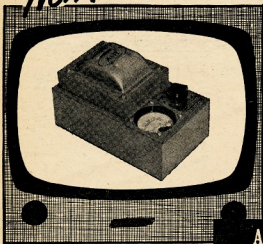
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In certain areas reception difficulties often occur due to low supply voltage, and it is certain that some ready means of detecting this condition would assist the serviceman, and perhaps save valuable time in endeavouring to locate a suspected fault within the receiver. With the above in mind, A & R have available the T.V. Voltage Adjuster as illustrated. Soundly constructed and finished in attractive Silver-Grey Hammertone, this A & R product provides the serviceman with an invaluable, yet inexpensive addition to his test equipment.

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The C.H.L. Modulation System

An entirely different approach to Constant High Level Modulation of Pentodes and Tetrodes, particularly suitable for v.h.f.'s

BY D. C. HABERECHT,* VK2RS

INTRODUCTION

In an effort to improve the effectiveness of modulation on the v.h.f. bands where one very often has to strain his ears to read phone either under difficult conditions or over great distance, the writer has experimented with many different systems. The two most effective types are, firstly, very heavy plate and screen modulation (around 200% modulated), or secondly, the system about to be described.

Very heavy plate modulation is very effective, however the requirements are fairly great, both from the difficulty in obtaining the heavy duty components necessary and of course, which to many of us is more important, the cost is particularly demanding, whereas the C.H.L. system's requirements are quite modest by comparison, any normal modulator capable of delivering 30 watts or so of power will be quite adequate. The actual results of this system are at the very least equal to high level plate modulation (around 200% modulated) and in many instances are considerably better.

This system does not claim to produce broadcast quality, in fact when working to full effect the distortion percentage is comparatively high, however the readability is still maintained. To some extent the quality of the signal at the received end depends on the a.v.c. action of the receiver. It is better to operate without a.v.c. for this purpose.

ADVANTAGES

The advantages are many, perhaps the greater of these is the simplicity throughout, comparatively the components are few and less costly, adjustment of operation is simple and quite easily effected without the need of expensive testing equipment.

One other advantage of equal importance is the fact that considerably more output can be derived from a final tube or tubes than the manufacturer's ratings state. This, of course, is due to the fact that we can run higher plate voltage and plate current on voice peaks because the final is completely voice controlled and therefore only passes current when modulated. As a matter of interest it is possible to run an 832 with 750 volts anode and an average anode current as accorded by the meter of 60 mA. The peak anode current will reach around 100 mA., which if it were allowed to remain at a constant 100 mA. would definitely ruin the valve. However, as this is only reached on voice peaks, no damage will result.

* 605 Abercorn Street, South Albury, N.S.W.

It will be seen from this that it is desirable to avoid wherever possible any form of continuous modulation, such as tone or a sustained whistle, not forgetting that illusive fellow called feedback.

It is interesting to note that when a sustained note of short duration is applied, there will be a trailing off of output from the time the note starts until the condition of a normal output is reached and will remain constant at this only if the p.a. is not operating under increased ratings. If the ratings are grossly exceeded, as was the case with the 832 described earlier, damage will then result to the tube.

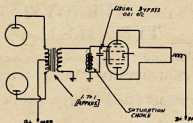
Other advantages are:

One of the few arrangements where it is possible to record greater power output than input as measured by plate current meter.

Simplifies the mobile or portable modulator problem, and conserves battery drain both in the p.a. and the modulator.

Non-critical in adjustment, tune as for a.m.

Has the advantage of carrier control.



To control power output, simply use the gain control on the modulator. Thereby it is possible to reduce the input for that cross-town QSO and help alleviate the QRM position (in the cities).

M.c.w. can readily be used to advantage. Keying can then be done in an audio oscillator, thus preventing key clicks and high voltage or heavy current keyed circuits. (If you can introduce a controlled amount of audio or r.f. feedback, this can be put to good use for m.c.w.)

There is always a safety measure with C.H.L. Irrespective of grid drive, the plate will not draw current until modulated.

Power supply requirements are modest, provided a husky output capacitance is used in conjunction with a normal pi-section filter it is possible to draw up to 50% greater power than

is possible with a.m. Regulation should of course be fairly good, hence the reason for the husky filter condensers. A suggested value of capacitance for input "C" 16 μ F., for output "C" 24 μ F.

These are, I feel, most of the advantages. The main disadvantage is the fact that initial tuning up is made difficult unless a double pole switch can be arranged to bring in d.c. voltage to the screen for tuning up purposes.

OPERATION AND ADJUSTMENTS

Looking at the circuit you will find that there is no d.c. screen voltage whatsoever, the screen voltage is purely audio voltage; or in other words, an a.c. voltage varying at audio frequencies. This average voltage level as measured with an a.c. voltmeter is adjusted under normal speech to a value of 75% of the normal d.c. screen voltage; increasing the developed voltage above this point will only cause excessive screen dissipation without increasing the output.

The method of adjustment is perhaps a little unusual. First, check the output of your modulator; make sure that it is capable of delivering about 20 to 25 watts, assuming a 100 watt final, or proportionately less for lower inputs. Then connect the modulator to your final, check the developed screen voltage at various settings of the gain control. If the choice of the saturation choke is correct, it will be possible to maintain the correct average screen voltage over a range of audio settings from about 10 watts to 25 watts, dropping off as the audio level is decreased below 10 watts.

Should the screen voltage continue to rise as the audio level is increased, the saturation choke should be substituted for another. Actually a writer has used a wide variety of chokes, including power transformers, old audio chokes, audio transformers and speaker transformers with equal success, so you will not find it difficult to achieve the desired results. Do not attempt to operate the final without this choke as the developed screen voltage will be much higher than necessary, even with a small amount of audio.

It can be seen from this that not only do we provide the necessary screen voltage to set the final in operation, but in addition to this we supply audio power which provides a pulse to the screen, is amplified by the valve and fly-wheel action of the final so that a developed pulse in the plate of somewhat greater proportion appears in the tank circuit.

It should be mentioned here that unlike normal screen modulation, the

aerial coupling is adjusted loosely, as too much coupling will tend to reflect a damping load. This, of course, will tend to restrict the peak plate power developed, thereby impairing the effectiveness of the system.

The best point of operation on the valve curve is as for a plate and screen modulated final. However, considerably less grid drive can be used without effect. There appears to be very little difference in the output and quality, even if the drive is reduced to half of manufacturer's ratings. This is also quite a considerable advantage in cases where difficulty is experienced in getting the required drive, such as in portable and mobile equipment.

One other point to consider is the final tank circuit itself. Here it is desirable to obtain the greatest practical "Q", for 2 metres and higher a pair of Lecher lines is suggested. It is also desirable to have a near flat feedline as far as standing waves are concerned, this, however, is not imperative.

This system has been used to equal effect with a number of final valves, such as 832, 832A, 829, single and parallel 807s and 5763.

In conclusion, a word of warning. It is not desirable to use C.H.L. on the lower frequencies with very heavy modulation, although I have not known the system to cause sideband splatter, it does develop an extension of bandwidth particularly if the receiver used incorporates a.v.c.; this sideband extension possesses some rather unusual characteristics not unlike double-sideband. It does not follow that this system is of no use on the lower frequencies, in

fact when operated correctly without excessive modulation, the quality can equal that of any of the better known forms of screen modulation, as has been evident from the tests conducted on 80 metres with a modified AT3.

The writer would be pleased to hear from anyone who may use the C.H.L. method or anyone who may have read or heard of the use of this method in days gone by. So far as I have been able to ascertain there has been no known use of this system and I am particularly interested to know whether it has been used either as described here or in any other form.

One final point not mentioned beforehand is the suggestion that a small amount of volume compression in the modulator can be quite a help in maintaining a constantly high level of output.

— . . . —

OVERTONE CRYSTAL OSC.

(Continued from Page 2)

general use. As in the other circuits, the LC circuit should resonate at three times the crystal frequency. This circuit behaves in a slightly different fashion to the other two circuits. When just switched on, it should commence oscillating at the fundamental frequency of the crystal with a strong third harmonic output. When the LC circuit is tuned to the correct frequency, oscillations at the fundamental frequency should cease, and only oscillations at the harmonic should be maintained.

In all circuits, the actual frequency of oscillation will not be an exact

R.D. CONTEST

R.D. Contest time is around again. Make a note on your calendar to keep the 16th and 17th August free so that you can participate in this popular Contest.

As some confusion apparently exists on the use of c.w. and phone, it is suggested that you again peruse the rules published on page 11 of the June issue of "A.R." and especially the comment on the rules on page 24 of the same issue under the heading of Federal Contest Committee.

multiple of the frequency marked on the crystal, but will be a multiple of a frequency 5 to 10 Kc. lower than the marked frequency. This is due to the fact that series resonance is being used, and to some extent, also to the mode of oscillation of the crystal.

Some idea of the possible harmonic activity of a crystal may be gained by joining a small coupling coil to the pins of the crystal holder, and then dipping it with the g.d.o. tuned to the harmonic frequency. A good dip indicates good activity, and vice-versa.

Crystals with good activity may be used on the fifth harmonic with the same circuits and adjustment procedure. However, operation at the fifth harmonic is more critical than operation at the third. Special circuits have been devised for operation at the higher harmonics, some of them achieving a high order of multiplication. A good article on this subject appears in "QST" for April, 1951.

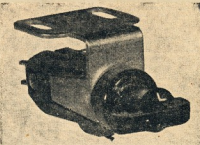
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288 Mc. Crystal Controlled Converter

BY J. L. OCCOLOWITZ,* VK3ZAI

TO make best use of stabilised signals on the 288 Mc. band a narrow band receiver is necessary. The superregenerative receiver which is so often used on this band is far too broad for crystal controlled signals which may only occupy a bandwidth of 6 Kc., although it finds use in copying unstabilised signals which may be 500 Kc. or more wide.

The converter described below should be used with a broadband i.f. if it is desired to copy unstabilised signals, although some unstabilised signals have been copied with difficulty using a BC348 as the i.f. receiver.

TUBES

Triodes are necessary to obtain suitable ratios at this frequency. Some tubes which can be used in grounded grid service are 6Q4, 6AM4, 6AJ4, 417A and 6J4. However, these tubes are either not readily available or are fairly expensive.

The value of twin triodes used in cascade circuits at 144 Mc. is rather doubtful at this frequency and no reports have been received as to their suitability.

In order to compromise between expense and performance, a neutralising push-pull 6J6 amplifier was chosen and a push-push 6J6 mixer used. If desired, signals may be fed straight into the mixer with some loss in performance, though on stabilised signals even this gives better performance than a superregenerative receiver.

CONSTRUCTION

The converter was constructed on a 10" x 6" x 2½" aluminium chassis. The tubes for the crystal multiplier chain are mounted above the chassis, whilst the r.f. amplifier and mixer tubes are mounted 4" apart, upside down, with the pins of the sockets projecting above the chassis. In this way all of the multiplier chain wiring lies below the chassis and all of the amplifier and mixer wiring, except for the output coil, lies above the chassis.

The oscillator injection line was mounted on small ceramic feed-through insulators obtained from an old compass receiver coil box. A shield 2½" x 1½" is soldered across the r.f. amplifier socket, isolating pins 1 and 2 from the others, and is earthed to the socket mounting bolts. Two holes ¼" apart are drilled just above the socket spigot to pass one side of each of the neutralising twin leads. The ends of the lines are bent inwards to make contact with the socket pins and are tilted downwards so that the lines lie outside of the plane of the chassis.

As a starting point the antenna coupling loop should be coupled tightly to the amplifier input line. The amplifier and mixer lines spaced about 5/16" one above the other, and the oscillator injection line placed between the mixer line.

SPURIOUS SIGNALS

Since this converter has been constructed some bother has been found with spurious beats from unwanted frequencies in the frequency multiplier chain. As an improvement, it is suggested that the whole of the frequency multiplier chain, including the crystal, be shielded and all power leads be brought through the shield via r.f. chokes and ceramic feed-through condensers. The injection frequency should be link coupled through a co-axial connector through the shield.

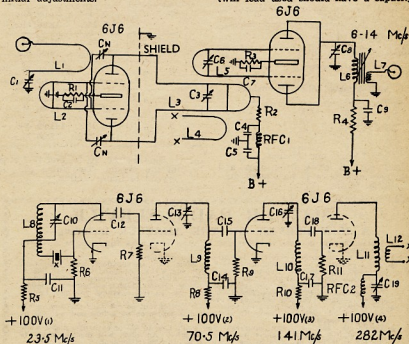
Similar treatment to this on a 50 Mc. crystal locked converter completely eliminated spurious response due to mixing with Channel 2 video signals.

ADJUSTMENTS

A grid dip oscillator/absorption wave meter makes adjustment of the multiplier chain simple and is also useful as a signal source on 288 Mc. for the initial adjustments.

After wiring and checking, apply filament volts and connect h.t. to point 1 through a 0-50 mA. meter. Tuning C10 should produce two dips corresponding to the 3rd and 5th overtone of the crystal. The 3rd overtone oscillation should occur with the condenser more than half in mesh. Check the frequency with a wavemeter and if possible the stability on a receiver. With h.t. on points 1 and 2, tune C13, for maximum r.f. on 70.5 Mc. Similarly with h.t. on points 1, 2 and 3, tune C16 for maximum r.f. on 141 Mc. The doubler stage to 282 Mc. should be tuned for maximum r.f. with h.t. on points 1 to 4.

Remove h.t. from the multiplier stages and apply to the r.f. stage only, lift the end of the r.f. amplifier input line from earth and temporarily bypass this point to earth with a 1,000 pF. disc ceramic condenser and connect a micro-ammeter from the bypassed point to earth. The neutralising twin lead used should have a capacity



- C1, C3, C6—30 pF. concentric air trimmers.
C2, C4, C7, C9, C11, C14, C17—1,000 pF. disc ceramic.
C8—30 pF. trimmer.
C10—50 pF. trimmer.
C12—47 pF. ceramic.
C13, C16—1½ to 8 pF. ceramic tubular t.v. trimmers.
C15, C18—25 pF. ceramic.
C19—approx. 5 pF. trimmer.
R1, R3—150 ohms composition (non-inductive) ½ watt.
R2—220 ohms. ½ watt.
R4, R5, R8, R10—1,000 ohms. ½ watt.
R6—10K ohms. ½ watt.
R7—100K ohms. ½ watt.
R9, R11—47K ohms. ½ watt.
L1 to L5—See Table.

- L6—No. 28 B. & S. enamel wire, 65 turns on ½ inch slug-tuned former.
L7—10 turns No. 28 B. & S. wound over cold end of L6.
L8—12 turns 18 B. & S. enamel, 5/8 inch dia., 1¼ inch long, tapped 3½ turns from xtal end.
L9—9 turns 5/16 inch dia., 5/8 inch long, No. 22 B. & S. enamel.
L10—3 turns 3/8 inch dia., 3/4 inch long, No. 22 B. & S. enamel.
L11—4½ turns 5/16 inch dia., ½ inch long, No. 22 B. & S. enamel.
L12—1 turn insulated link in L11.
X—Xtal 28.5 Mc. on 3rd overtone.
Cn—Lengths of close-spaced twin lead, approx. 1.8 pF.
RFC1, RFC2—L.F.F. type r.f. chokes.

* 128 Gaffney Street, Coburg, N.13, Vic.

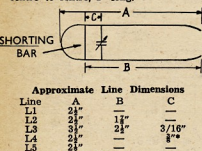
of about 3 pF. per section before pruning. Initially there will be fairly high current indicated on the ammeter due to oscillation in the amplifier. Carefully prune each lead by equal amounts until the grid current is nearly zero and make the final adjustment by splitting the twin lead partially and splicing or twisting tightly until the current is zero.

With neutralisation of the amplifier completed, apply h.t. to all stages and connect an antenna. Tune the r.f. stages for maximum noise and peak the i.f. output coil. It may be necessary at this stage to re-check neutralisation, tuning the i.f. receiver over the band should reveal no signals whose b.f.o. note can be changed by bringing a finger near the r.f. amplifier.

The choice of i.f. frequency for this converter was dictated by the availability of a 23500 Kc. 3rd overtone crystal which had been used in other gear. The use of a higher i.f. should produce a more uniform response from the i.f. stage.

TABLE

L1, L2, L3 and L5 are made from No. 14 tinned copper wire, spaced $\frac{3}{8}$ " centre to centre. L4 No. 18 enamel $\frac{1}{2}$ " centre to centre, 1" long.



Approximate Line Dimensions

* From end of line.

The position of shorting bars and trimmers may have to be altered during initial tuning.

DOUBLE CONVERSION PLUS

BY "SCOTCH"

Here is a scheme which will bear thinking about since it will achieve the simplest means for double conversion that I have been able to discover so far, in fact one might even go so far as to misquote that this is a case of "man's mind is greater than his pocket!"

By the choice of a first i.f. of 12 Mc.-16 Mc., and an 8.8 Mc. crystal frequency, it has been possible to achieve

a design that even Charles I. would have recognised as a money spinner.

Even the v.h.f. enthusiasts who seem to be able to build up converters for every band may be interested to see that 56-60 Mc. and 144-148 Mc. can be covered with the one crystal anyhow.

It is put forward as a scheme; you can work out the details of how to put it into practice. VK5GL gave me the idea for 56 and 144 Mc. and ground me the crystal. Thanks Clem.

Band	Crystal Oscillator Multiplier	Converter-Receiver Tuning Range	Comment
80 Metres	$\times 1$ 8.8 Mc.	3.50 Mc. — 3.80 Mc. 12.30 Mc. — 12.60 Mc.	Addition frequency.
40 "	$\times 1$ 8.8 Mc.	7.00 Mc. — 7.15 Mc. 15.80 Mc. — 15.95 Mc.	Addition frequency.
20 "	$\times 3$ 26.4 Mc.	14.00 Mc. — 14.35 Mc. 12.40 Mc. — 12.05 Mc.	In the i.f. range; extra second channel rejection by using converter.
15 "	$\times 1$ 8.8 Mc.	21.00 Mc. — 21.45 Mc. 12.20 Mc. — 12.65 Mc.	To be preferred; forward reading on the dial.
15 "	$\times 4$ 35.2 Mc.	21.00 Mc. — 21.45 Mc. 14.20 Mc. — 13.75 Mc.	Difference frequency. (not recommended)
10 "	$\times 5$ 44.0 Mc.	28.00 Mc. — 30.00 Mc. 16.00 Mc. — 14.00 Mc.	Difference frequency.
5 "	$\times 5$ 44.0 Mc.	56.00 Mc. — 60.00 Mc. 12.00 Mc. — 16.00 Mc.	Difference frequency.
2 "	$\times 15$ 132.0 Mc.	144.0 Mc. — 148.0 Mc. 12.00 Mc. — 16.00 Mc.	

Note that 80, 40, 20, and 15 metres can be covered from the fundamental of the crystal. Two tubes can therefore provide the output from the crystal oscillator section.

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- ★ Should you have the materials for that certain project, but do not have the time or are so placed that you are unable to complete the job, drop us a line and we will be pleased to assist.
- ★ Should you also have any equipment you would care to sell or exchange, please write giving all the necessary details including the price. An effort will then be made to include your item or items in the following month's advertisement.

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THE 1958 EDITION CONTAINS:

- An up-to-the-minute listing of Station Call Signs and Addresses of Licensees of Transmitting Stations located in the Commonwealth of Australia and Territories, and W.I.A. Listeners' No's.
- Over one thousand additions, alterations and deletions since the last edition, making more than four thousand amendments since the 1954 issue.
- DX Countries, Prefixes and their Zones.

HINTS AND KINKS

AN ALL-BAND R.F. CHOKE

Wind on 1" insulating rod or glass tube 7"-8" long. 4" close wound 22 B. S. enamelled wire, leave 1" space, then ten turns and 1/4" space, then six turns and 1/4" space, then 5 turns, and choke is complete.

—W. H. Hannam, VK2AXH.

A CHEAP SCRIBER WITH RENEWABLE TIPS

Old type, hardened steel gramophone needles are still readily available and these provide us with all the tips one will need throughout one's lifetime. Take a piece of brass rod, 3/16" welding rod is ideal, and drill a 1/16" hole

in one end. A lathe is helpful for this but not absolutely necessary. The gramo. needle is then soldered into the end of the rod. When the point becomes blunted, it is only necessary to solder in another needle.

—S. T. Clark, VK3ASC.

BC221 AS A CARRIER INJECTION GENERATOR FOR S.S.B.

Although already appreciated by many Amateurs, newcomers to the ranks of s.s.b. operation may not realise that a surplus BC221 Frequency Meter makes an excellent signal frequency carrier generator for reception of single-side-band suppressed-carrier phone signals.

Frequency stability and adequate band spread, essential requirements of an s.s.b. injection generator, are already built into the various models of the BC221. Output amplitude control over a wide range, another requisite of a good generator, can be provided for by replacing R38 (in Model 221-N) with a 500K potentiometer.

—M. R. King, KP4RC ("QST," Mar. '58)

TUNING RODS FOR I.F. TRANSFORMERS

Through the kindness of Denis ZL2ATO I was presented with a number of 1/8" Polystyrene rods with 1/16" hole through them and 16" long. These are used in the dairy industry. I cut them in half and drilled a 5/32" hole at one end and 1/4" hole at the other end, both 1/4" deep. I then used a jeweller's saw across the holes and sawed down to just below 5/32" and 1/4" holes, then I cut strips of tin out of a fruit can about 3/16" wide, bend one end (about 1/16") at right angles, slip into the slot and bend the other end, forming the letter Z, and cut off as close to rod as possible. Cement in place and repeat similarly at the other end. This leaves the knife edge of the tin about 1/16" below the level of the poly. rod and this made an ideal screw driver for i.f. tuning as the driver cannot slip off like an ordinary screwdriver.

—W. H. Hannam, VK2AXH.

AUDIO FREQUENCY TEST SIGNAL WITHOUT AN AUDIO OSCILLATOR

If an audio generator is not available when next needed, or should the one on hand deliver inadequate or badly distorted output, try the system used here at W2ZZG.

A good sine wave, as indicated by an oscilloscope, is obtained by feeding the v.f.o. signal into a communications receiver operated with the b.f.o. turned on. Audio output for test purposes is taken from the last stage of the receiver, and the amplitude of the signal is regulated by the audio gain control. Signal frequency is varied by regulating the b.f.o. control.

Naturally, the stability of the v.f.o. and the receiver play an important part in determining the stability of the audio test signal. Furthermore, coupling between the v.f.o. and receiver should be tight enough to mask out any noise that leaks into the front end of the receiver, but not so tight as to overload its r.f. amplifier. By experimenting with the input coupling, and by keeping the r.f. gain down in the interest of linearity, it is usually possible to end up with an audio output

signal that looks quite good on the face of a scope.

Although the equipment used here is not calibrated in terms of audio frequency, the frequency of the test signal can be intelligently estimated. In any event, the signal obtained is a lot more favourable for many jobs than is the frequently interrupted WWV signal used by some as a source of audio.

—A. H. Pedley, W2ZZG ("QST," Mar. '58)

FLUX FOR NICHROME AND NICKEL

The only flux which will solder nichrome or nickel is the following:

Aniline 51 c.c. Orthophosphoric Acid 34 c.c. Ethylene Glycol 40 c.c.

Grind Aniline and Orthophosphoric Acid together, add Ethylene Glycol. It should form a thin paste. If too stiff add more Ethylene Glycol until the right consistency is obtained. Use ordinary solder then wash off joint with methylated spirits as this flux is slightly corrosive.

—W. H. Hannam, VK2AXH.

TO MAKE RODS FOR CHOKES, ETC., WITH PERSPEX STRIPS

Place strips of perspex, the width and number to make up the necessary thickness, then put in a chloroform bath for ten minutes, seeing that a cover is placed over bath to prevent evaporation. Then press together and allow to dry, and you will have a clear bar of perspex which can then be turned to any diameter required.

—W. H. Hannam, VK2AXH.

Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 10 0

Mounted £3 0 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, £5.

THESE PRICES DO NOT INCLUDE SALES TAX.

Spot Frequency Crystals Prices on Application.

Reginds £1/10/0

MAXWELL HOWDEN

15 CLAREMONT CRES.,
CANTERBURY, E.T.,
VICTORIA

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. Cnt- No. ries	Call	Cer. Cnt- No. ries
VK3WL	14 211	VK3BZ	3 176
VK3MK	43 208	VK3KW	4 188
VK6RU	2 207	VK3EE	10 163
VK3ATN	26 204	VK9DB	31 181
VK4FJ	21 202	VK4WF	16 180
VK4HR	12 182	VK4RW	28 157

New Members

VK5XN	42 126	VK2AHH	41 120
VK4DO	20 128	VK7LZ	36 111

Amendments

VK4DO	20 128	VK7LZ	36 111
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C.W.

Call	Cer. Cnt- No. ries	Call	Cer. Cnt- No. ries
VK3KB	10 235	VK3XU	48 213
VK4FJ	29 234	VK3YJ	30 203
VK3KX	26 230	VK3YV	45 202
VK3FH	15 226	VK6RU	18 194
VK3BZ	6 222	VK2EO	2 191
VK4HR	8 218	VK5RX	23 176

New Members

VK2AHH		62 107	
Amendments			
VK7LZ	.. 17 162	VK3RJ	.. 42 138
VK4DO	20 159	VK6KW	40 109

Amendments

VK4DO	20 159	VK6KW	40 109
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OPEN

Call	Cer. Cnt- No. ries	Call	Cer. Cnt- No. ries
VK2ACX	6 250	VK3XU	61 221
VK4FJ	29 234	VK3YJ	30 203
VK6RU	8 235	VK3JE	12 210
VK4HR	7 233	VK3ATN	29 210
VK3BZ	4 231	VK3FG	3 201
VK3WL	6 225	VK3YV	23 201

New Members

VK2AHH	73 151	VK3EH	75 117
VK6KW	13 188	VK4DO	15 182

Amendments

VK6KW	13 188	VK4DO	15 182
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HANS F. RUCKERT, VK2AOU

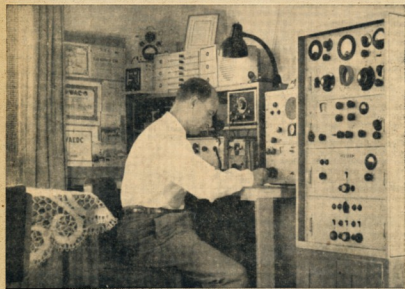
MY interest in electronics goes back to 1924 when I first heard a radio transmitter, but I did not start earlier than 1930 to build my first short wave receiver when we had science lessons at high school. Later in 1934 the teacher left it to me to lecture a few physics periods on radio. The physics honour paper for the leaving examination had the following title: "The problems of short wave communications receivers." It contained 80 pages of text, typed, and circuits. Here the double conversion superhet was described, 15 years before it became popular.

In 1936 the German short wave listener examination was passed (half a 11s examination) and the DE3562 number received. Later, during my university time in Berlin, I was technical adviser for district C and gave many lectures on receiver design. I also worked often at the lab. of the hq. of the D.A.S.D.

During the last 20 years about 80 technical papers have been written for eight radio magazines, but mainly for the "DL-QTC" and "Amateur Radio." The first paper reported on short and long path receiving tests made during VK-ZL Contests, 1936 to 1938.

Achievements obtained include:

- 4th Prize Receiving Contest, 1947, 2,000 Amateur Stations logged.
- 1954 D.A.R.C. Honour Badge with VK-2AOU call, for 20 years of service to Amateur Radio.
- W.B.E. (c.w.), W.A.E. and R.C.C. (after long t.v.i. discussions with Phil Rand).
- 1955 1st Prize W.A.E.D.C. for VK2 20 Metre Phone.
- 1956 1st Prize VK-ZL Contest for VK 20 Metre Phone.
- 1957 1st Prize VK-ZL Contest for VK2 10, 15 and 20 Metre Phone.
- 1956 VK Prize for "A.R." contributions.
- 1958 "Adams Trophy", VK2.



My 12-valve short wave receiver was exhibited at the great Radio Fair in Berlin, 1939. Even so, I could not get a transmitter licence, the number of which was limited to 500, until 1949 when 700 licensees were issued in March, partly due to the influence of W and G occupation authorities.

The first DL1EZ was immediately on the air hunting DX. 110 countries were worked and 92 confirmed (phone) when we decided to follow the invitation to go to VK2 in June 1951, after some important VK2-DL QSOs. One year later I was back on the air as VK2AOU. Among the now 113 countries worked (phone) and 90 confirmed are many old friends contacted before from the other side of the globe.

The station is in the dining room. There is no surplus gear or a junk box. The photograph shows (from right to left):

- (1) 100w. transmitter, 10 to 80 metres, bandswitching and shielded, 6 to 9 stages, plate and screen modulated final with clipper filter and monitoring c.r.o.
- (2) 19-valve Amateur-band receiver, 5 r.f. tuned circuits, 7 on the 1st i.f. of 5.3 Mc. and 9 on the 2nd i.f. of 352 Kc. plus two crystal filters in series; six bands: 80 to 6 metres.
- (3) BC221 and, underneath, e.c.o. frequency meter.
- (4) 9-valve superhet receiver, 3.4 to 54 Mc., xtal filter.
- (5) G.d.o., 1.4 to 210 Mc.
- (6) Absorption frequency meters: 150 Kc. to 60 Mc., 16 to 255 Mc.

(7) Two universal regulated power supplies for tests.

(8) V.h.f. field strength indicating receiver, mainly for tv. channels.

(9) Universal measuring apparatus "Farimeter": a.f. and r.f. signal generator, log v.t.v.m., V., mA., Ohm, C and L meter with many ranges.

(10) Two multi meters.

Components are sorted out in groups, so no time is wasted when looking for bits and pieces, and placed in labelled cartons or boxes.

QSO index card system, 2,500 QSOs made, 65% QSL efficiency. Most of the time is spent with experiments.

Accurals: A triband beam, own design, for 10, 15 and 20 metres, 4 feet high, a 140 ft. Zepp for 80 and 40 metres.

Member: W.I.A., D.A.R.C. and the A.R.R.L.

Profession: Research engineer, mainly electronic ceramics like capacitor dielectrics, etc. Amateur Radio has always been my main source of electronic experience.

Other Hobbies: Classical music (records), photography.

Australian citizen since June 1957. X.Y. is quite positive towards my activity. Daughter Sigrid had 2CB Quiz Kid experience (4th year high school). Son (8th class) is technically minded.

AMATEUR TELEVISION

(Continued from Page 7)

2. **Video Signals.**—Pye type co-axial sockets for all inputs and outputs, cords to be 1" co-axials with two Pye type plugs. A number of these will be needed, so a reasonably cheap plug/socket is required. They are available in quantity ex disposals.

3. **Radio Frequency.** (carrier freq.)—Amphenol u.h.f. type connectors, and 75 or 50 ohm cables as desired.

4. **Power.**—Always on octal plugs and sockets, to avoid misconnection with sync. B+ to be 260 volts in all instances.

5. **Mains.**—Male and female inlet and outlet to be provided on each power supply, to enable interconnection of several units. Outlets to be standard 3-pin.

Comments please, as if we can standardise connectors, exhibitions and demonstrations become comparatively easy.

Before discussing the transmitter proper, I will outline next month methods and equipment for lining up and testing the units described so far. This will ensure that the picture radiated is as good as the equipment will give.

UNIFORMS DUST COATS

for your Office Staff, Factory, Workshop, Servicemen.

★
Bowls Frocks, Tennis Frocks, for the retail trade.

★
D. MILBURN & CO.

238 Flinders Lane, Melbourne



**50 W. PLATE-MODULATED
CLASS C POWER AMPLIFIER**



Calling All Hams...

Because of its small sturdy construction, high efficiency and high power sensitivity, the Radiotron 6146 VHF Beam Power Valve is ideal for use in both mobile and fixed equipment. Similarly, its suitability for both class licences makes it the perfect valve for use in transmitters and audio amplifiers.



TYPICAL OPERATING CONDITIONS

Intermittent Commercial and Amateur Service.

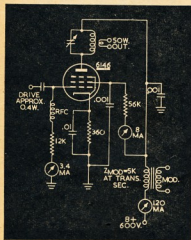
A-F Power Amplifier and Modulator, Class AB2

Values are for two valves

- Plate: 750 V. at 240 mA (Max. signal).
- Screen: 165 V. at 20 mA (Max. signal).
- Power Output: 130 W. at 10% total distortion.**
- Drive: 0.4 W., 108 V. Peak A-F grid to grid.

Plate-modulated R-F Power Amplifier, Class C

- Plate: 600 V. at 112 mA.
- Screen: 150 V. at 8 mA.
- Power Output: 52 W.**
- Drive: 0.4 W., 107 V. Peak R-F grid Voltage.



AMALGAMATED WIRELESS VALVE CO. PTY. LTD. 47 YORK ST., SYDNEY

BOOK REVIEW

"HOW TELEVISION WORKS"

An Illustrated Non-Mathematical Account of its Principles

By W. A. Holm

This is the title of the book which tells you all you need to know, without higher mathematics being necessary for you to obtain a thorough understanding of a very fascinating subject. This is a book we have enjoyed reading; it can be recommended to all interested in Television, and who isn't these days. It is a book that could be thoroughly enjoyed by the YL, but if she will not read it, do not be discouraged OM, it will make you an "expert" in her eyes.—VK3ASC.

Our copy from Philips, Eindhoven. Local stocks should be available when you read this at £2/2/0 per copy with postage an extra 2/-.

W.I.C.E.N. NOTES

A letter received from the Director of Civil Defence for N.S.W. expresses his appreciation of the efforts of officers and members of the Institute in organising and maintaining efficient and reliable emergency communications. The Director also outlined action initiated by his own organisation to facilitate the more effective working of W.I.C.E.N.

We have thanked the Director, on your behalf, for both the message of appreciation and steps taken to help us to help the Community as a whole.

Actions such as related above are proof that the value of the service rendered by the Amateur in times of emergency is readily recognised by those who have had experience of the quality of his work.

Authorisation Cards are now in the hands of the printer and will be issued as lists come to hand from Divisional Co-ordinators. Great care has been taken to select material which will withstand the most rigorous conditions, in order to ensure that the log section will become something to be proud of with the passage of time and the succession of entries therein.

VK9 reports the enrolment of twelve members during its initial drive.

Unfortunately it is not possible to publish frequency table yet as some Divisional Co-ordinators have not sent in the figures for their States.

An article appearing in July "A.R." sets out the N.A.T.O. Code, hence there is no need for us to reprint it at this stage. The author of the article referred to may not be enamoured of the Code; however it is important for W.I.C.E.N. operators to bear three points in mind.

- Firstly, the lack of a common code during World War II, proved very costly in Allied lives, due to the misunderstandings which occurred.
- Secondly, the Code takes into consideration the speech characteristics of the large number of Countries involved.
- Thirdly, properly used the Code will become a good habit—a habit that will stand us in good stead in times of emergency. For under these circumstances who knows who will be working whom?

If you have not already done so, forward your request to your Divisional Co-ordinator now for registration as W.I.C.E.N. operator. All applications must be forwarded through Divisional Co-ordinators to Federal Co-ordinator. After registration authorisation cards will be sent to you via your Divisional Co-ordinator who will see that the necessary signatures are obtained.

The Numbering System will follow the pattern employed for S.W.I. Groups, that is, Divisional prefix followed by individual number in four-figure group.

SUPPORT THE ADVERTISERS WHO
SUSTAIN "AMATEUR RADIO."

TWO NEW "GELOSO" VFO'S AVAILABLE SOON

MODEL 4/103:

144 to 148 megacycles, using two 6CL6s as oscillator-multiplier, one 12AT7 as multiplier and 5763 amplifier; sufficient drive for 832 or 2E26 amplifier stage. The 4/103 v.f.o. provides netting facilities with switching to crystal operation for established communication.

Price not known yet but is expected to be at the well known attractive price of all other Geloso products.

MODEL 4/104

New six-band v.f.o. including the 11 mx band. Covers 80, 40, 20, 15, 11 and 10 mx. Uses 6CL6 osc. driving 5763 amp.; sufficient drive for 807 or 6146 p.a. stage.

MODEL 4/102

The 4/102 has now superseded the 4/101. The 4/102 is a five-band v.f.o. covering 80, 40, 20, 15 and 10 mx using 6L6 amp. providing sufficient drive for higher powered push-pull, push-push and single-ended finals.

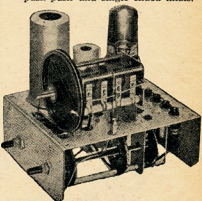
TRANSMITTER EQUIPMENT

Geloso Signal Shifters, complete with calibrated dial and handsome grey finished perspex escutcheon £10/4/9

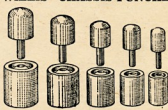
Geloso Pi-Coupler 31/6

Special Cabinet designed to house Geloso Signal Shifter. Louvered ends screened for t.v.i., lift-up lid, complete with chassis and front panel, hammertone grey finish. Dimensions: 17" wide, 10" high, 10" deep. Will fit between standard relay rack upright members. Can be supplied with 19" panel if required to be screwed to standard relay rack.

Price £6



"WILLIS" CHASSIS PUNCHES



	1 1/2"	1"	3/4"	1/2"	1/4"
3/8"	21/-	1-3/16"	35/-		
1/2"	22/6	1-1/4"	42/6		
5/8"	22/6	1-3/8"	47/6		
11/16"	23/6	1-1/2"	47/6		
3/4"	24/6	1-3/4"	47/6		
1"	33/6	2"	62/6		
1-1/8"	33/6				

Any special size requirements made to order.

Q-MAX SCREW-TYPE CHASSIS CUTTERS

5/8"	26/7	1-3/8"	38/6
3/4"	26/7	1-1/2"	38/6
7/8"	29/4	1-3/4"	42/-
1"	34/10	2-3/32"	68/9
1-1/8"	34/10	2-1/2"	81/7
1-1/4"	34/10	1" Square	52/8

One key supplied with each cutter. Spare keys 1/8 each.

Please include Freight and Exchange with Orders.

WILLIAM WILLIS & CO. PTY. LTD.

THE HOUSE OF QUALITY PRODUCTS

428 BOURKE ST., MELBOURNE, C.I, VIC. Phone: MU 2426

GELOSO PI-COUPERS 31/6
WILLIS PI-COUPERS CHOKES, 150 watts, heavy duty type as recommended in A.R.R.L. Handbook; constructed on high quality ceramic former; operates all bands up to 30 Mc.; insulated for 3,000v. 25/- each.

With Typical Precision Engineering and Calibration Accuracy comes the

GRUNDIG GRID DIP OSCILLATOR

Model 701

- Continuous frequency coverage from 1.7 Mc. to 250 Mc.
- Operates on 110/230v. a.c., 40 to 60 cycle mains.

Price: £33/15/0 (Includ. Sales Tax)

PI-COUPLES FOR HIGHER POWER

Compact, bandswitched, high power pi-coupler inductor for co-ax output.

Rated for a max. 1,200w. d.c. at 300 ma. input. Higher voltages on c.w. and a.c.h.

For max. efficiency the 10-metre coil is made of in. silver-plated strip, 15 and 20-metre coils of 1/8 in. silver-plated wire, and the 40 and 80-metre coils of 12 B. & S. tinned-copper wire.

Input capacity 250 pF. max. output capacity 1,500 pF. max. A single pole inverse-position switch is provided which can be used for switching in parallel capacities when required.

Recommended input capacitor: Eddystone Type 817. Recommended output capacitor: Standard miniature 3-gang BC condenser which is suitable in this position up to 1 kw.

Price: £4/17/6 nett

DONATIONS

Despite the fact that the appeal for funds to send a delegate to Geneva in 1959 to represent the Australian Amateurs is only a little over a month old, almost one-half of the necessary finance has been raised. This is an excellent start, but like most appeals after the initial burst of contributions, the interest in tags and donations begin to fall off. The same may be expected in our case, unless every Amateur makes the necessary effort. Ask your Amateur friend if he has subscribed when next in QSO with him—press him with the importance of raising the money so that his individual views may be properly presented at the appropriate time. Divisions are also urged to publicize the appeal in their own broadcasts so that as many as possible subscribe to this worthy and most important appeal.

Several questions have been asked in connection with the Fund—a common one being, "What will happen to the money raised if the full amount is not subscribed?" I think there is every indication that the amount will be raised, but taking the most pessimistic outlook (which should really not be even contemplated at this stage) we can say that the matter will be put to the Federal Council of the Institute who will ensure that the money raised is used in the best interests of EVER-licensed Amateur. We feel sure that every licensee is well aware of the issues that are at stake and will not let the cause down.

Another question raised is who is likely to represent the Australian Amateur at Geneva. The necessary qualifications for such a representative are comprehensive and Federal Executive have already enumerated them, but it is putting the cart before the horse to select or even discuss individuals at this time until we are sure the funds are available. Suffice it to say that several offers have been received, all of which will be thoroughly considered before making a final decision.

In the meantime keep sending your donations to the:

**Federal Secretary,
Box 2611W, G.P.O.,
Melbourne, C.1, Vic.**

The following is a list of contributions to the 11th July, 1958:—

£10/0/0

W. J. Falconer, VK3AWF; Woome

Club, VKB

£6/6/0

W.L.A. :

H. T. Mulder, VK6MK; N.W. Zone Tasmanian Division.

£5/0/0

M. T. Gabriel, VK2AOG; R. A. Priddle, VK2RA; J. C. Duncan, VK3VZ; B. R. Harris, VK3ZF; H. H. Lloyd, VK5HL.

621210

J. S. Anderson, VK3LM; A. P. Stephenson, VK4PS.

£3/0/0

A. W. D. Wilson, VK:

0043010

82/10/0
J. G. Rodger, VK5ZAU.
82/2/0

Lake, VK2OK; N. L. Southwell, VK2ZF; N. S. Gilmour, VK2ZU; D. A. Connelly, VK3ADK; A. J. Zarth, VK3AJZ; A. K. Head, VK3AKZ; R. R. Mackay, VK3MU; R. Neal, VK3ZAN; I. deG. Macmillan, VK3ZDG; F. Moody, VK4FM; M. C. Bolton, VK6MB.

£2/0/0

C. Berry, VK2AGM; T. J. J. Stroud, VK-2AMR; J. H. L. Field, VK2AQF; W. G. Coward, VK2AWP; A. V. Bennett, VK2VA; A. J. Fielden, VK3AKD; A. M. Doble, VK3AMD; J. B. Hawke, VK3ARR; N. M. Templeton, VK-3HG; H. P. Webber, VK3PW; L. S. Dixon, VK3JTE; W. L. Robb, VK3YR; G. Pooley, VK-4DS; E. J. Lake, VK4EL; L. J. Brennan, VK-4EO; W. Rickard, VK4DR; T. F. Robbins, VK5AG; W. Coxon, VK5AG; R. A. Williams, more, VK6RH; R. Jaeschke, VK6WU; W. N. M. Nisbet, VK7BN; P. E. L. Dunne, VK7PD; R. Fleming, VK9SP.

£1/10/0

J. Adams, VK3ARJ; D. A. Greenham, VK-3CO; A. S. Condon, VK5WO; B. H. Smith, VK6BS; A. R. Deverell, VK6ZAD; P. R. Hoare, VK9RH; W. C. Gee, VK9WG.

£1/5/0

F. R. Williams, VK3ZDW; K. T. Robertson, VK4ZAK; D. R. Garratt, VK5DG.

£1/1/0

Nourie, VK2DQ; N. W. Skulander, VK2JW; N. W. Marshall, VK2XM; W. J. King, VK3AK; W. Falckenberg, VK3AL; W. Marshall, VK4AF; R. W. Holland, VK4AQ; J. A. Kelly, VK4DK; E. Ashila, VK4EA; R. E. Lees, VK4ER; L. R. Newsome, VK4LR; W. A. E. Flannery, VK4XO; D. A. Fraser, VK4ZAF; G. H. Gibson, VK4ZG; J. Trehan, VK4ZQ; D. E. Hosking, VK5DH; R. F. Trehan, VK5DQ; R. G. Harris, VK5SR; J. Gabbertus, VK6B; G. Moss, VK6GM; R. W. Muir, VK6RW; F. H. Turner, VK6UF; W. J. Howse, VK6ZA; R. J. Howse, VK6ZB; R. J. Howse, VK6ZC; R. J. Manning, VK7RL; C. F. Wright, VK7LZ; R. T. Calvert, VK7RT; L. K. Eap, VK9LE.

£1/0/0

S. Brown VK1ASB; H. Hutton, VK1HV.
H. Wright, VK2AWH; Dr. R. Black, VK-
2QZ; E. Savage, VK2ACS; G. Bootes, VK2AGC;
J. Graydon, VK2AIS; B. Powell, VK2AIZ; J.
H. Smith, VK2AKS; J. F. Smith, VK2AKT;
age, VK2PL; A. Silght, VK2ZA; R. Crewe,
VK2BBO; K. Brady, VK2AFP; J. Jack, VK-
2BZ; J. H. Jones, VK2BZ; J. H. Jones, VK-
VK2AMX; J. Scougall, VK2ASC; W. Baillie,
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B Alexander, VK3ADV; W Hempel, VK-
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Thompson, VK3CB; A Finch, VK3AO; M
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ADHERENCE TO COPY DATE

Once again correspondents to this magazine are reminded that copy must be in the Editor's hands at 191 Queen Street, Melbourne, by the 8th of the month preceding publication.

Recently, publication has been delayed through copy arriving late. In future the magazine is going to press on the due date and it is problematical whether copy arriving after the 8th of the month will appear.

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VK3WG; P. Seibre, VK3MX; T. Rodda, VK-
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3JL; S. Sedgwick, VK3JL; L. K. L., VK3-
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3ZCH; M. Osborne, VK3CZ; G. Small, VK-
3ZEA; W. Annison, VK3AW; K. Love, VK-
3ZC; C. Anderson, VK3XV; W. Trenewen,
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Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

NEW REGULATIONS

Editor "A.R.," Dear Sir,
I have just perused the recently issued "Handbook for Operators of Amateur Wireless Stations," Feb. 1958, and am interested to note differences between this and the latest previous issue in my possession, that of January 1946.

The former regulations stated that "An experimental station licensee may transmit and receive in plain language messages" etc. The new edition states (para. 66): "An amateur station licensee may transmit and receive, in English, plain language messages" etc. This appears to imply that only the English language may be used. On the other hand, there is no prohibition of the use of any other language. It would be of interest to know whether it is no longer permitted to use languages other than English.

If this is the case, what is the position which would arise in the event of a similar regulation applied to the Amateurs of another country with an official language other than English? Would not this effectively prevent Amateur communication between that country and Australia even though such communication were officially permissible?

Another alteration worthy of note is that whereas formerly transmissions of unrecorded music for the purpose of tests only, were allowed for short periods, we are now not permitted to transmit OR RECEIVE music (except single audio tones for tests of short duration), or other form of entertainment. No longer will anyone be able to compete with "Piccolo Pete" or other nuisances on 7 Mc!

The new phonetic alphabet has been canonised, together with a clear indication of official pronunciations. A glance at the phonetics shows that these are almost all words which are common to and similarly pronounced in most Western European languages. This should be of comfort to your lamenting correspondent, Mr. Norman Burton (July 1958). I, for one, will now be glad to become "THUH-REE CHAR-lee no-VEM-ber."

—Laurie Walters, VK3CN.
I.P.E. is discussing the matter of English language regulations and necessary action will be taken.—Ed.1

I.T.U. FUND

Editor "A.R.," Dear Sir,
I quote ad. in June "A.R.": "By donating £1 you can insure against loss of your favourite band". This descent to the methods of commercial salesmanship in an effort to obtain finance by misrepresentation, could cause us to lose the very thing we are paying to retain. Surely there is not one among us naive enough to believe that the £1 only will safeguard our interests at the next I.T.U. Do you really believe that we will keep fully all the frequencies now allotted?

There will be one awkward question asked of our delegate at I.T.U., viz.: "Why are the VKs not fully using the bands?" and no amount of word man-

ipulation is going to provide a convincing answer. The short-lived bursts of activity at week-ends is nowhere good enough. I am constantly asked by DX "Where are VKs?" Europeans, etc., are hungry for QSOs with us.

We will only get out of Amateur Radio what we put into it—and the Ham who never puts a sig. on the air, or the prefix-chaser, who scavenges the band to pick the eyes out of the DX, with an occasional three-minute QSO does the game a dis-service. The £1 for I.T.U. is useless unless the boys will work the bands, provide activity. Fellows who think more of Ham Radio than they do of their personal achievements. The great number of awards and certificates now available tend to make it all an intensely competitive affair. Fair enough, but without a broader base of co-operation to sustain it, Amateur Radio is in for an inglorious demise.

Ours is a case of populate or perish, and up to now we have shown that we do not fully need the bands we now have allotted.

Those OTs who swung the dial across the empty spaces of the v.h.f. spectrum 10-20 years ago and who are still active, must ask themselves how much will be left to us in 10 years time.

The sharing of a band can be little better than direct loss. Try working DX now on 7 Mc. and you will see what I mean. I.T.U. is not much more than 12 months away and £1s alone will not protect us.

—Al Shawsmith, VK4SS.

EXPLANATION

Editor "A.R.," Dear Sir,
An item in the New South Wales notes in the July issue of "Amateur Radio" is not correctly reported, and as a result has caused some confusion.

The article refers to a Notice of Motion of mine which was before the N.S.W. Division. Whilst in some remote way it may refer to R.D. Contests, it is not relevant as the rules for this Contest usually cover the question.

The Motion, which was passed unanimously at the June meeting, was: "The rules for any transmitting award granted by the Wireless Institute of Australia clearly state that to obtain credit for that award, two-way communication must be established on one and the same frequency band, i.e. cross-band contacts are not eligible."

I hope this clears up any doubts which may have arisen in the minds of members.

—F. T. Hine, VK2QL

RURAL FIRE BRIGADES

The Publications Committee acknowledges with thanks a letter from Mr. A. J. McDonald, of Gooram, Vic. Mr. McDonald expresses appreciation of country folk for the work of experienced men who devote the skill employed in their Amateur Radio hobby activities to the important community service of volunteer fire fighting communications in rural areas.

The Committee agrees with Mr. McDonald that his list is far from complete and is confident that the large number of men who add their technical help without thought of gain or favour will continue to do so to strengthen comradeship and efficiency in a valuable service.—Editor.

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DX

Frank T. Hine, VK2QL
30 Abbotsford Road,
Homebush, N.S.W.

Planning and advising every one possible of our plans for the DXpedition to Lord Howe Island has not enabled me to watch the bands to any great extent. However, the conditions have been concerned during the last month, but general opinion has indicated that the bands have been in the doldrums as far as VK has been concerned.

From a VK point of view, the m.u.f. does not appear, should normal predictions exist, to favor Lord Howe and VK contacts on 14 Mc. and above. It has been amazing how the information we started from Sydney has been dispersed to DXers round the world, due to the co-operation of unselfish DX men, who passed it to countries which have not been regularly audible in Sydney. 2AIR and myself say thank to all who co-operated.

An indication of how bands can come to life was shown during the week-end of the A.R.R.L. Field Day, when the bands were jammed with signals, especially 7 and 3.5 Mc.

The extent to which some of the DX gang will go in an attempt to ensure a contact with a DXpedition station has been shown by the letters, etc., which 2AIR has been receiving. These amount to nothing much more than an attempted bribe, as the writers have requested some special consideration and have enclosed dollars to help with the consideration. However, they have received their letters back complete without comment by 2AIR.

Further to my comment last month on the break in the station in the Caribbean area, it is confirmed that the Cayman Islands and Jamaica are now one and the same country. Credit for the new countries may be obtained provided they were not previously credited under the former Leeward and Windward group. If you had previously submitted QSLs to the Windward group, you may find a group which was on St. Kitts Island and was used for your Leeward credit, you will now have a credit for St. Kitts only. The same applies to the Leeward group. If you had both Jamaica and the Caymans as separate countries, they now count as only one. This by the way is for the W.I.A. Awards. I have no knowledge of how the W.I.A. Awards Manager is going to act on the changes made.

The calls used from Greece, Crete and Rhodes are re-issued very soon again after they have been in, so a station you contact one month can be an entirely new issue the next. SV0WN is at present active on Crete and SV0WB currently active from Rhodes. (W4KVX).

NEWS AND NOTES

I had some interesting letters from DX stations this month, to wit, G6YQ, OY7ML and OHYVY. Some general interest information from each.

G6YQ has regular contact with OY7ML and if you have trouble getting a card from Martin, George may be able to help you. He expects to meet ZD30 personally before you read these notes. OY7ML, in a very good attempt at English, is waiting a new printing of his card. He is always running dry of them, but complains that he has not received many promised QSLs from DX stations and especially requests VK2QL to QSL the 14 Mc. contact. VK0VW, VK0AB and VK0TC not to forget him. A lot of VK2 QSLs are outstanding, so if you need one from Martin he may be able to help you, so try and get your comments on seeing the supply ship on VK6AS QSL as he has a friend who is a crew member of the ship. OHYVY, who was OHYVVO, is getting his station back on the air. He worked under his home call but did not QSL him, by withholding the Aland Is. QSL until he received one from QSO. He has a lot of "frozen" cards waiting. In March this year he married OH2FB.

SV80, after only about two days' operation from the Sultan of Oman was forced to close down by the authorities.

SV9AP has closed down and returned to the UK.

QSLs from VS1BB/V59 have been distributed and all should have them by now.

* Call signs and prefixes worked.

z—zero time—G.M.T.

KCAAF QSLs for all VK contacts have been dispatched by W4JIN. If you sent I.R.C.'s, they will reach you accordingly, otherwise through Bureau.

VE5A, at time of writing is convalescing in Sydney after having broken his leg during cable repair operations (JAOM). ZD1FO is active on 14 Mc. phone, but at time of writing his b.f.o. has given out, but guess that will have been overcome by now. Does anyone know why UA1KAR uses an oblique stroke in varying numbers? In the activities list you will see a few different ones.

The news that the A.R.R.L. has disallowed all contacts made with ZLIAZB on the Kermadec Is. is causing no surprise to those who heard some of these "contacts" and apparently disallowed the States were not intended to take the action they did. The unfortunate part is that quite a number of the contacts were complete and in order, but they did not take much imagination to realise the almost impossible task to sort them out especially with some of the things that go on, that they had no alternative. There is no doubt that ZLIAZB was heard in the States on 3.5 Mc. but some countries who were reported to have been heard on 3.5 Mc. were just not possible under the circumstances. Predictions for 1958. ZC3AL has QRT and returning to VK2. Bureaux please note.

ACTIVITIES

3.5 Mc.: No definite DX reports but 2AGH reports hearing many W stations over a few hours during the F.D. week-end.

1 Mc.: 2AMB: YOKSRA, WUY9Y. Red de Baitour: AL0AB, W1389, G337, G338, G339, G340, W1400, W1401, W1402, W1403, W1404, W1405, W1406, W1407, W1408, W1409, W1410, W1411, W1412, W1413, W1414, W1415, W1416, W1417, W1418, W1419, W1420, W1421, W1422, W1423, W1424, W1425, W1426, W1427, W1428, W1429, W1430, W1431, W1432, W1433, W1434, W1435, W1436, W1437, W1438, W1439, W1440, W1441, W1442, W1443, W1444, W1445, W1446, W1447, W1448, W1449, W1450, W1451, W1452, W1453, W1454, W1455, W1456, W1457, W1458, W1459, W1460, W1461, W1462, W1463, W1464, W1465, W1466, W1467, W1468, W1469, W1470, W1471, W1472, W1473, W1474, W1475, W1476, W1477, W1478, W1479, W1480, W1481, W1482, W1483, W1484, W1485, W1486, W1487, W1488, W1489, W1490, W1491, W1492, W1493, W1494, W1495, W1496, W1497, W1498, W1499, W1500, W1501, W1502, W1503, W1504, W1505, W1506, W1507, W1508, W1509, W1510, W1511, W1512, W1513, W1514, W1515, W1516, W1517, W1518, W1519, W1520, W1521, W1522, W1523, W1524, W1525, W1526, W1527, W1528, W1529, W1530, W1531, W1532, W1533, W1534, 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Once again we bring to all our readers the latest news on the s.w.l. front. We hope you enjoy reading these notes, and if you do, please help us by adding your comments to the notes? Details of your activities could well be of great interest to other readers.

Card of the Month Contest.—This month the winner of the contest is Robert Tacey, of Newport, Vic., with a QSL card from Archille, FKAS, Robert, who holds the S.w.l. Number WIA-L3003, is one of the younger members of the VK3 Group. Archille enclosed a photo of his station and a very interesting note with his card. Here are some of the details he provided. He is a 34-year-old weather forecaster and also has charge of the weather station communications which include 3 transmitters, 7 receivers and 5 radio telephones. His own rig consists of a DX100 transmitter, SX28 receiver whilst the antennae are 8WJK beams. The photo is that of the first rig used by FKAS and depicts a suit controlled 45w transmitter and a Super Pro and Hallcrafters 540 receiver. With this rig Archille had 2,032 contacts with 83 countries in just one year's operation.

S.w.l. of the Month.—So as to help more of you s.w.l.s to get to know one another, I have re-introduced this feature. I can only keep it going, however, if you write and tell me a little about yourself and your interests in general.

Featured in this month's issue as S.w.l. of the Month is Don Grantley, WIA-L3022. Don is 31 years of age and when just a little boy in short pants went to the local State School at St. Albans, Vic., where he was living on dairy farm. He later graduated to the Williamstown High School. At 18 years, Don joined the R.A.A.F. as a telegraphist and after training at Point Cook station and Brisbane, went to VK3, thence to Biak and on to the Philippines. Talking of Biak, Don mentions that the name of Nauru was nearly misspelled nearly perforated the orderly officer one night. Don is wondering if he is the same Norm ("Trigger") Dash of the Drungu Convention. Was it you who nearly did a naughty thing like that Norm?

Upon receiving his discharge, Don gave away his radio equipment and joined the P.M.O. Department. He again took up radio as a hobby in 1951, but lost interest again in 1955. In 1956 he was married, which I guess may have had something to do with his loss of interest in radio. Don now has a beautiful baby daughter, Sharon, aged one year. In 1956 he moved to Hobbrook, N.S.W., where he is now located and took on the radio again last year. He is now employed as a groom on a sheep station at Hobbrook. So you can see Don has so far had a most varied and no doubt interesting career.

His equipment, which was described in last month's notes, includes a No. 19 rx, SC823 rx, and a 3-valve t.r.f. rx. Don hopes very soon to pass the A.O.C.P. exam and go on the air himself.

VK3 S.W.L. GROUP

At the June meeting of the Group only 11 members were present, probably due to the fact that the cold weather kept many of them at home in the warmth near their receivers. The Group President, Len Foynter, was in the chair. Reports were received from Ted Wickett, Maurice Cox, Len Foynter and Ian Hunt and then general business was conducted in a minimum of time. Arrangements were made for a party of members to visit the station of Len 3LN, a report on which will appear in next month's notes. After the reception, Ian took his turn in describing his receiving equipment to the Group and as a result some rather lively discussion took place on the best method of using this equipment. I and some members went home with quite a few new ideas as a result of this evening.

Other members include the fact that our President, Len, and Secretary, Ian, recently sat for the A.O.L.C.P. and A.O.C.P. respectively. Yours truly made a fair mess of the telegraphy reception due to having just run up three flights of stairs, but both of us are, at time of writing, eagerly awaiting the results of the theory paper. Dave Jenkin, of Orbest, was recently in Melbourne on a fortnight's holiday and as well as attending the

June meeting visited myself at home and also 3GB, 3XD, and I think 3YS and 3XB. By all accounts he really enjoyed his time in the big smoke away from the daily grind of milking cows and cleaning milking machines, etc. Dave purchased an RX receiver to take back to Orbest with him, so he'll no doubt have even bigger lists of DX for Frack 24L to include in the DX column. Maurice Cox is still playing around with different types of antennae till he reads out to readers of this magazine and has not yet stopped talking about the most enjoyable time he had when visiting SMX while recently on holiday in South Australia.

As a result of my recent appeal for issues of radio magazines, some were kindly given to us by Barry 3JB and Reg 3ZAD. We thank you very much for your kindness again and can assure you that they will be passed on to someone who can really do with them. If any others can help us in this way, it will be greatly appreciated.

VK6 S.W.L. GROUP

News now has come to hand of the fact that the Short Wave Group of W.A. has now been recognised as a Member Club of the W.I.A. VK6 Division. We congratulate the Western Australian Division on having taken this step, and trust that the move will result in increased strength of the Division and also involvement in the future an influx of new blood into the ranks of licensed Amateurs in that State.

The rules of the VK6 Group include the following points: (1) Each member pays an annual subscription of 2/6. (2) Each member will be entitled to all privileges available to an associate member of the W.I.A. (3) Each member will be issued with an official W.I.A. Listener's Number to be retained by him as long as he is a member of the Group and a financial member of the W.I.A. If he becomes unfinancial, the Number will lapse and cannot be re-issued. (4) A copy of "Amateur Radio" will be posted to each member every month. (5) Members will have full use of the Divisional QSL Bureau. For other details desired by any persons interested, you can contact Eric Hildrick, 22 Streetview Road, Rivervale, Perth. So go to it all you VK6 s.w.l.s, and let us know all about your activities.

CORRESPONDENCE

A very light mail bag this month brings only two letters. These are namely from Don Grantley and George Baty (3AOM). Don whose letter I overlooked when first beginning these notes, tells me that his latest completed project consists of a power supply with five different power outlets providing combinations of 5v., 6.3v., a.c. and 200v. d.c. which allows him to plug converters, etc., direct with the unit with no trouble at all. It seems like a very good idea. He has now begun the construction of a multi-position antenna switching unit. The completion of this unit will allow him to walk about the shack without becoming tangled with leads running in all directions, he states. Stations heard by him recently include ZY, YJ, EAB, JZ, KZS and SV0WP. His country tally stands at 131 at present and still seems to be increasing steadily. Don logged 55 countries on 20 mx during the month of June and says that this is about average for him.

George 3AOM, who, incidentally, is VR3A's OM, has written to me and enclosed a copy of a letter received by him from a Swedish s.w.l., SM3C21. This Swedish listener states that he is 19 years of age and is located in Ornskoldsvik, in the north of Sweden, not far from the Arctic Circle. His home QTH is well located, being almost on the top of a high mountain. His antenna is a long-wire 197 metres in length, directed to the Pacific. His rx's are a Hallcrafters S20 and SX71 and an RP1 pre-selector which works very well, especially on 40 mx.

During the month of May he logged 12 VK stations on 40 mx phone and received his first VK 40mx phone confirmation from VK2ADY. He has heard on this band VK3FT, VK2AII, VK2JZ, VK2AIA, VK3OM and VK3IFM. He is at present in a contest arranged by the Swedish Radio Club, all QSL's are sent. He counts as 14 points. This listener, whose name is Sven Elfving, is interested in corresponding with an Australian s.w.l., so if you wish to write to him, please direct to c/o gatan 15, Ornskoldsvik, Sweden. Thanks for passing on the letter George, and hope the old rig keeps getting out more and more use. It has been. I can even hear you, so it must be working well indeed.

Well now I must finish these notes off and get back to the more practical in readiness for October. I hope they have been of interest to you and that they'll drop me a line between now and the next issue to let me know how YOU are doing. Cheers and good hunting until next month.

PREDICTION CHART, AUG. '58

Me.	E. AUSTRALIA	W. EUROPE	S. ME.
0	2	4	6
10	12	14	16
18	20	22	24
30	32	34	36
40	42	44	46
50	52	54	56
60	62	64	66
70	72	74	76
80	82	84	86
90	92	94	96
100	102	104	106
110	112	114	116
120	122	124	126
130	132	134	136
140	142	144	146
150	152	154	156
160	162	164	166
170	172	174	176
180	182	184	186
190	192	194	196
200	202	204	206
210	212	214	216
220	222	224	226
230	232	234	236
240	242	244	246
250	252	254	256
260	262	264	266
270	272	274	276
280	282	284	286
290	292	294	296
300	302	304	306
310	312	314	316
320	322	324	326
330	332	334	336
340	342	344	346
350	352	354	356
360	362	364	366
370	372	374	376
380	382	384	386
390	392	394	396
400	402	404	406
410	412	414	416
420	422	424	426
430	432	434	436
440	442	444	446
450	452	454	456
460	462	464	466
470	472	474	476
480	482	484	486
490	492	494	496
500	502	504	506
510	512	514	516
520	522	524	526
530	532	534	536
540	542	544	546
550	552	554	556
560	562	564	566
570	572	574	576
580	582	584	586
590	592	594	596
600	602	604	606
610	612	614	616
620	622	624	626
630	632	634	636
640	642	644	646
650	652	654	656
660	662	664	666
670	672	674	676
680	682	684	686
690	692	694	696
700	702	704	706
710	712	714	716
720	722	724	726
730	732	734	736
740	742	744	746
750	752	754	756
760	762	764	766
770	772	774	776
780	782	784	786
790	792	794	796
800	802	804	806
810	812	814	816
820	822	824	826
830	832	834	836
840	842	844	846
850	852	854	856
860	862	864	866
870	872	874	876
880	882	884	886
890	892	894	896
900	902	904	906
910	912	914	916
920	922	924	926
930	932	934	936
940	942	944	946
950	952	954	956
960	962	964	966
970	972	974	976
980	982	984	986
990	992	994	996
1000	1002	1004	1006

NOTES

FEDERAL

POWER INCREASE

By the time this item appears in print, all Amateurs will have been notified of the increase from 100 to 150 watts input granted by the P.M.G.'s Department. Of course the usual conditions apply in respect to size of power supplies and power amplifiers.

I.T.U. FUND

Federal Executive is gratified with the response made by Amateurs throughout Australia to the I.T.U. appeal.

Whilst the results of the appeal have been satisfactory, we still have a long way to go to meet the required target, and in this respect we again ask those Amateurs who have not responded to give a little more time and thought to the reasons behind the appeal, and to reconsider their decisions.

It is in your interest and for the protection of your hobby that this appeal has been launched, and it is your duty to support it. More on this matter is discussed elsewhere in "A.R."

EXAMINATIONS FOR COMMERCIAL OPERATORS' CERTIFICATES OF PROFICIENCY

In connection with the examination of candidates for Commercial Operators' Certificates of Proficiency, it is invited to read Appendix 1 of the 1957 edition of the British Post Office manual "Handbook for Wireless Operators" in which, the International Morse Code signals forming the separation sign, used in the transmission of fractional numbers between the whole number and the fraction and groups consisting of letters and figures (between the groups of figures and letters) differ from those published in earlier editions of the Handbook.

For purposes of examination either form of the signal in question will be acceptable up to and including the Commercial examination to be held on 20th June 1958, after which only the new form (which is also the signal of the hypen or dash sign) shall be acceptable.

SPARE VALVES FOR INDIAN AMATEURS

Federal Executive has received a number of letters from Federal Secretary, Doug. Bowie, VK2DU, since he left in April with Mrs. Bowie on a world tour.

Writing from India Doug. says: "... the Government has restricted imports of valves and as they don't make them here, they are in real short."

Now we all have stocks of valves which we will probably never use again, although they may be quite serviceable. Let's use them to

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

R.D. CONTEST—

Dates: Saturday, 16th August, 1800 hrs. EAST; Sunday, 17th August, 1750 hrs. EAST.

Opening Ceremony: Remembrance Roll Call Sat. 16th August 1800 hrs. EAST.

Rules: Note Rule 4 and 11 for transmitting. June 1958 "A.R."

VK-ZL DX CONTEST—

Dates: Phone—4th-5th October, 1958. C.w.—11th-12th October, 1958. Bands: All h.f. bands. (Contest conducted by N.Z.A.R.T.)

"CQ" WORLD-WIDE—

Dates: Phone—Last week-end Oct. '58. C.w.—Last week-end Nov. '58.

NATIONAL FIELD DAY—

Date: Sunday, 25th January, 1959.

keep our Indian colleagues on the air! Send your spare tubes to the Federal President, Max Hull, VK3ZS, 428 Bourke St., Melbourne, C.I. or deliver:

In South Australia to either of the following:
Gordon Bowen, VK5XU, 73 Portrush Rd., Toorak Gardens,
B. W. Austin, VK3CA, 34 Fisher St., Fullarton Estate,
L. F. Brice, VK5OK, 21 Hampton Street, Brooklynn Park,
J. C. Haselden, VK5JC, 1 Ormond Ave., Cheltenham Gardens;
In Tasmania to Ken Millen, VK1KA, 57a Butler Avenue, Moonah.

Tubes should be in serviceable condition, and if the type number cannot be read, should be labelled "Tubes" and be sent to the Amateur Radio Society of India for distribution by that body as it sees fit.

HANDBOOK FOR OPERATORS OF EXPERIMENTAL STATIONS

The revised edition of the above handbook has been released by the P.M.G.'s Department and is now available for sale from the Department at a nominal cost of 3/-.

It is considered that every Amateur should have a copy of this publication in the shack for reference, information and education.

OVERSEAS PUBLICATIONS

From time to time F.E. receives copies of publications from abroad, some of which, in which many items of interest are contained.

An appeal is made to Amateurs who are able to translate such languages as Spanish, Italian, German and Dutch, who would be willing to help out in the translation of such technical items, and items of interest which could be reprinted in "A.R."

FEDERAL QSL BUREAU

The A.R.R.I. advises that the new address of the W.I.K.I. QSL Bureau is: George L. De Grenier, WIGKX, 108 Gallup Street, North Adams, Mass., U.S.A.

Delayed advice has been received that the station PK1FC was scheduled to be active during the 1957-58 season. The contest was conducted by FFYC with operators ON4AA, FJSD and FPRS. They proposed working on all bands 3.5 Mc. through 23 Mc. and on 72 and 144 Mc. The contest was held in the expedition to Andorra many DX stations failed to QSL, so they have decided that on this occasion they will reply to cards actually received. The address for QSLs is: I.R.C., Brussels, Belgium. Those who enclose an I.R.C. and a self-addressed envelope will receive their QSL direct. Others will be sent via Bureau.

From the 10th September to 30th September inclusive, concurrent with the 13th Fair of Cremona, the Radio Club of Cremona section of the A.R.I., a competition will be staged between world stations and Amateurs of Cremona. An award is available styled "Cremona Stradivarius Award". Requirements for the award are: (1) Eight contacts with Amateurs in Italy, (2) Six contacts with Amateurs in Europe, North Africa and the Near East, (3) Two contacts with Amateurs in other countries. Contacts must be on PHONE ONLY on any band and at any station and must be worked more than once. Additionally there will be two awards of gold medals, one to the Amateur in the most distant country from Italy who qualifies for the above award and another to the foreign Amateur who contacts the most stations in Cremona. Claims and QSLs confirming contacts must be sent to Radio Club of Cremona, Box 144, Cremona, Italy, before 31st December, 1958. Active stations in Cremona are: I.R.C., BEB, THZ, BWN, FH, ZAY, TZX, RMO, CEM, EBF, CGM, SZH, ZED, AKN, TAM, and FE.

The R.S.G.B. QSL Bureau will be closed from July 18 to August 12, inclusive. Do not send any correspondence which will arrive there between those dates. In future cards for G.I. GM and GW should be sent to the R.S.G.B. QSL Managers in those countries. Their addresses are:

GI—Mr. G. H. Martin, G5IWH, Swallow Lodge, Green Island, County Antrim, Northern Ireland.

GM—Mr. D. Macadie, G6M5D, 154 Kingsacre Road, Glasgow, S4, Scotland.

GW—Mr. J. I. Reid, G6WNU, 25 Watterston Road, Galsburgh, Cardiff, Wales.

The new address of the Bureau for Denmark is: E.D.R. QSL Centre, Box 335, Aalborg, Denmark. The new QSL Manager is Borge Petersen, OZ4NU. He replaces OTH who retired in July 1957 after 20 years of service as QSL Manager.

SV0WR, Howard Olson, has worked many VK stations this year, but has received very few cards to date. "Ole" was the operator signing W6M/C1 and C3 of China and later Formosa during 1946-47 giving hundreds of overseas stations their first contact with Formosa. He would like all outstanding QSLs to be sent him care of U.S.A.A., 254 West 10th St., New York, N.Y., U.S.A., or via the SV Bureau, Box 364, Athens, Greece.

NEW SOUTH WALES

The June meeting of the Division started on a sad note. Those present were told of the passing of "Jock" McDowell, VK2GM. The meeting observed one minute's silence in memory of Jock.

38 new members comprising 17 full and 21 associate brought the membership to an all-time high of 941 members. Although this total contained some 50 whose subscriptions were still unpaid.

Congratulations were passed to the newly formed S.W.I. Group for their excellent work as a net. Those present were held by the section had resulted in much outstanding work being completed.

The lecture was given by Alan Hennersey, VK2RX, on modifications to Command receivers and transmitters. Alan demonstrated stripped-down and modified units of this excellent equipment.

The deferred motion by Frank 2QL was carried unanimously. Frank and other members were on the subject of cross-band contacts made by stations in contests and explained how ridiculous such practice was.

The A.C.C. chairman reported the progress of the class. He mentioned that of the twelve in the past class, seven completed the course. Leon pointed out how elimination of Morse Code had more time available for the technical side. 40 students had enrolled for the next class.

The meeting closed at 10.30 p.m. and members agreed on a motion which is proving a popular conclusion to the meeting.

HUNTER BRANCH

Well it's on again—the first post-war Dinner of the Hunter Branch will be held at the University of Technology on October 4 at 7.30 p.m. Judging by the number of letters received, the "do's" their resurrection should be well received, so come along and meet the other chap. Next day will revert to Blackalls Park where a full programme will be provided for all and sundry—full details elsewhere in this issue.

The AGM was attended by VKs 2CN, 2AQR, 2ZL, 2CS, 2QB, 2XT, 2AKV, 2ANL, 2FP, 2SF, 2ZLD, 2RJ, 2AFA, 2AEE, with associates Sutherland, Stobbs, Nibbel, Bailey, Grey, Bergmann, Jefferson and Broad. Les 2AOP was absent at Palm Beach Convention and associates Jackson and McLaughlin were en route to the Conference of Burnmore with Bill 2ZL AR. The lectures of the command group were appreciated by all, as were the circuits provided by Vice-President Stuart 2ZDL. The received notice of the AGM was noticed at the meeting and as usual Leon put his foot or something in it welcoming the reverend General. Come along, the mob could do with a taste of dignity.

Heard Fred 2AEE putting out an excellent signal on 40. City slicker Alf 2CE was piloted into Senile Bay by 2ZL but thought he was lost when John 2ANL, who plays antenne still he is not on his own there as it is a shrinking village. Alf and his XYL missed out on the 40 challenge of yo-yoing as they were in the aforesaid article was expertly manipulated by Jim 2AHT who went through all the published tricks plus some of his own. However, 2AQR too was unimpaired who played the billiards against Jim with yo-yos flying past his head while trying to make a shot. 2ZL was last seen promising to replace OTH who has been lost found the "secret weapon" how to beat his rival.

Harry 2AFA still on the receiving end of cheap DX cards. Bill 2XT still drumming of geisha girls while Leon 2CS, when he is not trying to put out a signal on 2AWX, is trying to convince the boys and himself that s.b.b.

SILENT KEY

It is with deep regret that we record the passing of:—

VK2GM—G. ("Jock") McDowell, 25/6/58.

OBITUARY

GEORGE ("JOCK") McDOWELL, VK3GM

Amateurs all over Australia were shocked to hear of the untimely passing, on 25th June, of George ("Jock") McDowell, VK3GM. Jock held his call since 1931 and was continuously active except for the war period, when he served with the Signals Section of the R.A.F.

He excelled at everything he attempted and was equally at home in the modern laboratory or modern workshop. His signal was always outstanding for he demanded the utmost from his equipment and his ability enabled him to obtain it. He was always ready to help his fellow amateurs and many newcomers had their paths made smoother by his timely advice and help.

A minute's silence was observed, when the announcement of his passing was read both at the monthly meeting and over the VK3GM broadcast.

His funeral at the Kookwong Crematorium was attended by a large number of friends and colleagues.

To his wife and two children we wish to extend our sympathy and to state without hesitation that Amateur Radio has suffered a great loss with his passing.

is the only way to perfect contacts. Hope that ZEN, Ed., sends an article to "A.R." on his fully transistorized rig and write up all the excellent results up this way. Full marks go to Ed. for taking Pop ZAHU out the other day to receive a word-picture of his youthful prodigal around Wollongong. The best of the local chaps, short skip seems to be keeping merry 50-and-so and they seem to be too tough if the finer weather can be spent to keep the ether warm these cold nights.

The August meeting of the Branch will be held at the University of Technology on Friday, 24th, 8 p.m. and the next social at 2XT's on Wed. 27th. See you all there.

VICTORIA

There was quite a sizeable muster at the July meeting to hear Herb Stevens (3JO), the President of the V.I.G. and his merry men extol the virtues of v.h.f.

Herb has been playing around with these bands and has made a number of utterances are always treated with the respect they deserve. He started off very quietly by giving us an insight into the possibilities of the bands, where they are and the type of chap who inhabits therein, but he really worked up to his subject when he switched to field days and 50 Mc DX. He was then at his best, and his interests lie. As Herb explained, the higher frequencies, with their smaller gear, are particularly suited to portable and mobile work and much of the finer weather can be spent in these pursuits. However, from what I can make of it there always seems to be difficulty in finding enough mountains to go round.

After these few opening remarks, Herb introduced us to some portable members of the Group and a more enthusiastic band of chaps would be hard to find. As each came forward he brought his rig and described its make and operation, answered questions, and then retired in favour of the next contestant. The first to speak were Ray ZKX, John ZKX and Bob 3AN who work as a team. Ray and John are the tx men and Bob seems to concentrate more on the rx and power supply angle. Following these came ZEDP (apologies to ZM, missing your name) with his mobile 144 Mc, Michael ZKCS of series modulation fame, John ZKQ the 500 kiling, Ron 3AHJ with his walkie-talkie outfit, Bruce ZBF (he likes to be alone (he works 376 Mc.), and Keith 3YQ on printed circuit techniques. As can be imagined there was plenty of first-class matter to be worked and hints and kinks galore, so don't be surprised if there is a sudden rush of activity on the bands by the d.c. boys, you v.h.f. chaps. Admittedly you have to change your perspective somewhat in making the change, but what of it, results are good from a minimum of power and 50 Mc DX is likely to be yours for a year or so yet. All told, it was a very profitable night, thanks to Herb, and his band of willing workers.

It would be more profitable, of course, if all that was expounded could be committed to paper and published in the magazine as these have really gone plain with their experiments. The knowledge so propounded would be invaluable to others who work on the frequencies and especially to those who were unable to attend the meeting. As Technical Editor was there with a very expectant gleam in his eye so, who knows, we might be

lucky enough to fluke an article or two. (Prospect look bright so far—Ed.) What we really need is someone who has the time and the ability to scout around and write up all the stuff as most of the blokes who are getting the results are usually too busy to write about their doings. Any volunteers? We in Victoria are very lax in this regard as most of the technical articles submitted come from other States. At the moment the situation is very grim and the Technical Editor would welcome any contributions with open arms. Here is an opportunity for VK3 to retrieve some lost ground so don't be backward in coming forward.

New members admitted at the meeting were: T. J. Fousard and R. G. Loutit Junior Associates; R. F. Leitch, Associate; would the following full members: D. J. Knox (3GK), P. B. Turner (6PT), H. A. Harris (3ZEY), M. B. B. (3AER) (3AER) (3AER) (3AER) (3AER). As most of the evening was given over to v.h.f. there was very little general business transacted. However, we did hear that power input has been increased from 10 to 150 watts and this, no doubt, will gladden the hearts of most.

Word came through from our Federal Secretary in India that Hams in that locality are desperately short of valves and would like to donate them to a worthy cause, send them to Max 3ZK. Will 3ZK be able to do anything for them? No. No dues please by request, and please ensure that each valve is readily identifiable as to type.

Slow morning, will probably be pleased to hear that ZKF is back on the air with daily broadcasts. Details of these broadcasts are believed to be as follows: Times R.A.S.T. 4.30 to 6.00 p.m. Speeds 5 to 30 w.p.m. Each broadcast is broken up into sessions of a quarter of an hour each. The first session is at 5 w.p.m. which increases by 5 w.p.m. in each successive session. The frequency being used is 685 Kc. which is very close to the Flying Doctor service so that copy is usually a little possible between overs from the latter service.

In response to requests, here is a list of Victorian Division Life Members: R. A. C. Anderson, 3WY; J. F. Court, 3EXPT; J. J. Duncan, 3VZ; A. J. G. Glover, 3AG; W. R. Gronow, 3WG; B. Hardie, ex-3YK; R. W. Higginbotham, 3BR; C. Hopson, 3IX; W. E. H. Howden, 3BD; R. E. Jones, 3JX; G. Marsland, 3NY; J. M. Martin, ex-P.M.G.'s Dept.; Fred Schnell, WBUZ; H. N. Stevens, 3JO.

There will be an illustrated lecture at the next meeting on "Eyeball and Television" to be given by Mr. Owens, who is associated with Andrew Goddes Pty. Ltd., Optometrists, Melbourne. This is a topical subject and promises to be very informative, so don't miss out. To those of you in the country or in distant suburbs, don't forget that some of the lectures given at the meeting may be on tape and may be borrowed from Len 3LN. There are four tapes available at the moment I understand. Len has spent a lot of time in obtaining these recordings and we are very grateful for this service which he gives to members.

MIDLANDS ZONE

It is heartening to note that the zone activity has "risen from the grave" and the fortnightly hook-ups have commenced on 80 mX

with quite a good roll up each night in distinction to the nights following the formation of the zone. Regulars on the bands have been 3ACN, 3FY, 3IC, 3AFJ, 3DG, and 3ARS, and quite a lot of steam has been let off, despite the cold, or possibly because of it. At Castlemeane R.S.L. Hall on 8th July, the first meeting for this year was held with the above calls in attendance; also Don Carr. An apology was received from 3FO, who is kept fairly busy earning a crust from the boys. With a borrowed tape recorder, and a tape of a lecture given by Commander Batterham at 3FO's house on the activities of Progress during and after the last war, we spent quite an enjoyable evening before the fire. After the tape, and supper provided by the local cafe, 3ARS was appointed President for the year with 3ACN again as Secretary, and 3FY as Correspondent and Treasurer.

3ARS recently put up a respectable piece of timber, which weighs 2 tons, stands 80 ft. high, and took two tow trucks to get it into position. Apparently at one stage when transferring the lift from one tow truck to another, the first tow truck almost became airborne, its certificate of air-worthiness having been revoked. It was a very close call. The broad, musty to the relief of its operator. Also in construction at 3ARS is a new shack, which is to be doubly screened in the hope of containing harmonics. It is a place where the harmonics should be confined. All in sundry seemed to be plagued with t.v.i., even though all the necessary precautions are taken, especially on 15 mX. I wonder if anyone else has had any trouble. Could be?

For those interested, before I forget, the zone hook-ups are on the second and fourth Tuesdays of each month at 7.30 on the high end of 80 mX.

EASTERN ZONE

If you want to keep on seeing the Eastern Zone notices appear in this magazine, please forward the information through to me, as it is impossible to write these notes without information—W. G. Francis.

WESTERN ZONE

Roy 3CR, of Briarhill, is busy constructing an WJMK rotary beam, so hope it performs to expectations Roy. Alan 3AJX, of Morham, and Herb 3AJJ, of Luback, are building gear driven beams on the 2 mX band, so this adds to the already keen interest taken in this band around this area.

Our latest Ham on the air is Vic. Madern, 3AEQ, of Murtoa. He is transmitting a nice signal on the 40 and 80 mX bands. The rig consists of a Geosco driving an 897 with a pair of 80% as modulators.

QUEENSLAND

Perhaps of prime importance is the recording of another successful convention at Palm Beach, Qld., on June 14-15-16. To date no financial results have been published but indications of a small profit reflect favourably on the administration, catering, etc. For a very excellent job performed we must thank Bruce and Brian 4ZBH, and their wives. The boys went to a great deal of trouble in the weeks prior to and during the Convention to

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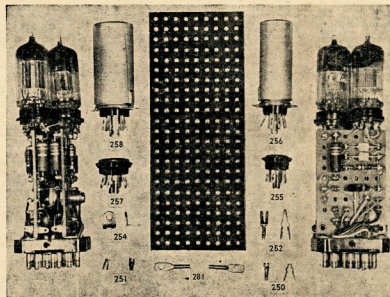
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joints, get a supply of contest sheets and pencils, make the necessary domestic arrangements to enable an expanded operating schedule, and, to really give the contest a go this year.

The new rules, details of which have already been published, together with notes of explanation, gives the "minor" operator a better chance now to include his contribution in the State score, so it is up to everyone to try to get in the best of this year's contest. Another sell, don't knock off at a minimum score, pile them up and be in the fun, for every contest counts.

Ken 5KH was amongst those mobile over the June holiday week-end and operated portable at Black Springs. A good signal Ken, better at a distance than close, but then it was a peculiar week-end for 7 mhz work.

Have heard that Wally SDF can prove he plays bowls, having received four trophies for prowess in that regard. In fact Wally SDF has actually seen them, which as he quotes, "Wally regards them as precious as DX cards." Good luck to you Wally, but don't keep off the hands altogether.

The 5FY tx in use at 5WC these days has finally buried all its bugs, in fact so good that it is now being used for a regular visit by the R.I. up there helped the noise problem quite a bit.

Keith 5KH, twelve perigrinations, continues to keep the Herts map, with Chas 5GB doing his share for the hills. If you are looking for an idea for a sky wire to fit a small mobile, Keith has a plan for 5NH, Wally 5GB and see the arrangement he beats with r.f. Works, well, too, judging by his work with the boys give him on his signal. Don't know exactly in that regard, but Wally 5GB is not a quad either, cubical or comical, not a dipole, tripole, or monopole, you tell 'em Tobby.

"See you when you are older" Luke 5LL manages a constant signal and cheery comeback on any QSO.

David 5AW gives a 400 airding now, and since fitting the half-wave filters to the feeders has put his trouble behind him. Hughie 5BC comes in on the d.c. bands a lot these days and is often heard over the very good.

If any of you miss out on the session on Sunday mornings, tune to 2 or 6 mhz on Sunday that is the time to get in. The session from 5GB. This service is provided by George for those who either cannot make it at 10 mhz or are the late risers.

Making of tapes, there are a number available, of lectures given at previous meetings and can be obtained from Gordon 5KU, to whom you should write. There are also a part of the service available for country members who may not be able to attend these interesting meetings.

Technical articles are required from members for publication in this magazine. There must be many projects under construction, modifications to existing gear, or general ideas worth passing on to others that could make an interesting and helpful article to someone. So out with the pens fellows and get VK5 back into the news again. These articles do not have to be earth shattering, remember if a project interested you, it must necessarily interest many others. If you solved it better still, tell 'em know about it.

Tom 5AQ at Leigh Creek now active and looking for contacts. Lance 5XL is varying his hours and has been in his new mobile club where they are working with a film and tape sync. scheme. Joe 5JO and his boys' group recently obtained some of the two Wells boys when Tom 5TG, Carl 5SS, Frank 5MZ and John 5ZBA joined in and made a Ham night of it demonstrating some 1 and 2 metre bands, interesting, but a little whilst so doing. Some models of electric trains made by the club members were also shown and played with by the "big boys". A sack of work Joe and Co., may it grow in strength.

We were all very sorry to learn of the sickness that has laid low Lance 5XL. I hope he is not a VK5 Ham, his voice surely is, for he must be one of the most consistent voices from VK5 heard and worked here. Do what they tell you, Jim, and make it easy, then come up smiling.

Instruments, yes, Doc 5MD again, whose piping notes are heard in the background in demand so if you want one register your need with Doc and he will tell you when it is available.

The increase of 50 watts in maximum power input announced early July will no doubt suit many, more particularly the v.h.f. boys, no longer a lot of coilings, more boys right now hitching the bigger tubes, or altering transformer tapplings. It will certainly be easier to get better efficiency with the modular units, say, say, say, say, say, to be "screwed down" to keep below 100w.

WESTERN AUSTRALIA

I must apologise for the brevity of the notes this month, but this is due to your scribe having been on holidays and out of touch with things in general.

Last month's meeting was held as usual. The lecture for the night was given by Norm 6MF, who brought his crystal filter s.a.b. rig to the meeting. Norm told us of his endeavours to get a s.a.b. rig running and his final success with the filter type. The rig shown to us drives a final 100W lineal.

The announcement of the increase in maximum legal power to 150 watts came last week and was received with mixed feelings by VK6 Amateurs. It will make no difference to the QRP side and good luck to those who use the majority of the other rigs are using some tube combination which will permit of an increase beyond the 100 watt mark with little difficulty.

This month has seen a quietening of the DX bands, particularly 25 and 21 Mc., where few signals can be heard at present. This is expected to improve rapidly over the next few weeks. The 80 and 90 mhz bands have a usual share of activity. These bands are being used a great deal these days. 6 mhz is very quiet presently. The 10 mhz band has had a few stations. There was only one JA opening in June, when one station worked five JAs. The local boys are still turning their guns on Africa, and the 10 mhz band has been heard in ZSU, nothing has eventuated.

Visited 6MU during the last couple of weeks. I was amazed at the signals put into Merredin (163 miles) by the 20 mhz gang in June. 6KW and 6MK could be heard 80 I believe this is quite usual in this location.

6MA has been working on his rig and is getting it well set up. Transmitter and motor are complete, and Alan is now working on a converter to put ahead a compass rx.

As I said, notes are brief this month, so I'll save goodbye till next month.

The response to the appeal for funds to send a representative to the I.T.U. conference has been very gratifying so far. Have YOU sent your £1 yet?

TASMANIA

NORTH WESTERN ZONE

I believe it has happened at last. Ted 7EL has commenced his "beginners" class at Devonport with about nine starters at the first meeting. Theory only is being attempted at the moment, but later it is hoped to expand and increase the meetings to weekly one instead of monthly and also to include Morse code instruction.

As mentioned last month, associate Ken Brown acquired 7RN's 107 tx and is busy building converters for it. Real hot they are too. Last time seen, Ken was replacing a drive gasket on the Vauxhall. You shouldn't drive a 107, so fast. Ken Associate Terry 30 Mc. is been welding the garden fork, probably expects an early spring. Apart from that Terry has acquired a ZC600, a 1000 watt, 30 Mc. Sounds like good V.U. material. Terry 30 Mc. I strip and a front-end which can be made to cover channel 7.

President Sid TSP is also keen on the radar tx. Sid has also bought a xtal calibrator for 144 Mc., so anyone requiring frequency checks on 2 mhz are welcome. Roy 7RN, although not heard lately, has been working on the construction of a beam. This, presumably, will be mounted on top of the converted wind-mill tower, with the t.v. beam on top again. Another signal, I have heard for many years is from George 7XL, who has become so disgusted with the absorbent effect of the ionosphere cloud over 56 Mc. between here and VK3 that he has decided to come down to TMC. George is running 80w., so should get out OK.

Our worthy Hon. Sec., Max, is away for a few days in Launceston, chasing grass seeds or something. He has been asked to look some of the boys up whilst there. Max The Doctor is port t.v. king. Athol Manning, says things are pretty quiet at the moment, although he has some interesting results using a beam above 35 ft. up. Pat 7PM seen in Burnie recently after a bout in hospital; trust everything OK again now. Pat.

As these notes are the last ones I shall write as ILS for some time, and as I shall be in VK5 by the time these appear, and the next meeting is held, may I take the opportunity to say, say, say, say, say, thanks for the many happy meetings. Cheers, TILS clear.

PAPUA-NEW GUINEA

The meeting this month was once again poorly attended, there being only three members present. It is hoped the absentees will be present at our next meeting. We welcome a new member this month, Bob Hopper. VK6RR, ex-ZL1AJK and ZL1AIF. Bob Halls from HAMILTON, about a tour of duty with O.T.C. here. Bob is very active on c.w. and recently was heard on phone.

Another surprise packet this month was our brass pounder, yes, the wrist has broken, at last and Russ 5XK is now trying to break the jawbone. I heard him the other night with a very pronounced quiver in his voice. He reckons it's his microphone, but don't you believe it. Nerves—a plain case of nerves, that's what it is. Anyway, good luck in your new venture, Russ.

This Division will be holding meetings on the air in the near future to try and stir up more interest than we have at present. So all you chaps in the bush, keep your ears tuned to 6W1 for further announcements.

The time of the Sunday morning news bulletin has also been altered and can now be heard at 8.30 a.m. instead of 10 a.m. Apparently the chaps forgot about this change last week.

It was announced recently that the new regulations were ready and anybody requiring a certificate should apply to the Secretary who will send away for them.

Well, I'll have to QRT for now, but remember the monthly meeting is held on the last Wednesday of each month at 8 p.m., same QTH. A 100 per cent attendance is expected.

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